Test Case Studies

This topic provides a brief overview of Cisco Unified Communications System Release 6.0(1) and the sample business case studies developed to reflect real-world contact center deployments.

This topic contains the following sections:

- Introduction
- Understand Test Objectives
- Sample Business Case Studies

Introduction

Cisco Unified Communications System delivers fully integrated communications by enabling data, voice, and video to be transmitted over a single, unified IP network infrastructure. Cisco Unified Communications validated systems are designed to optimize feature functionality, reduce configuration and maintenance requirements, and provide interoperability with a wide variety of other applications. Cisco Unified Communications System provides this capability while maintaining a high level of availability, quality of service (QoS), and security for the enterprise network.

Cisco Unified Communications System includes system testing and validation for the following environments:

- IP telephony (IPT)
- Contact center

In this document, we discuss the testing and verification of only the contact center components of the Cisco Unified Communications System Release 6.0(1).

Overview of Contact Center

Contact center components are an integral part of Cisco Unified Communications family of products. The contact center functionality delivers intelligent contact routing, call treatment, network-to-desktop computer telephony integration (CTI), and multi-channel contact management over an IP infrastructure to call center agents anywhere in the enterprise.
The Cisco IP network infrastructure also permits rapid deployment of emerging applications such as desktop IP telephony, unified messaging, video telephony, desktop collaboration, and enterprise application integration with IP phone displays.

By combining multi-channel automatic call distributor (ACD) functionality with IP telephony in a unified solution, contact center products help to rapidly deploy a distributed contact center infrastructure.

Contact center software profiles each customer using contact-related data such as dialed number and caller-entered digits (CED) and, simultaneously, monitors the resources at contact center to meet customer needs, including agent skills and availability, queue lengths, expected delay and so on.

This combination of customer and contact center data is processed through user-defined routing scripts that graphically reflect a company's business rules, thus enabling contact center software to route each contact to the optimum resource anywhere in the enterprise.

Contact center software enables companies to deploy a complete network-to-desktop CTI strategy, including comprehensive capability at the agent’s workstation. A contact center system delivers a uniquely rich set of data to business applications, providing enterprise-wide call-event and customer-profile information to a targeted agent’s desktop.

### Understand Test Objectives

The intent of conducting system-wide testing is to define and validate the seamless interoperability and stability of components that comprise a complete and optimized Cisco Unified Communications system.

Cisco has done this by designing, installing, configuring, and testing contact center hardware and software that work together in a predictable, effective, and reliable manner.

Cisco has created two fictitious business case studies and has defined real-world business requirements that exercise specific features and functions of the contact center set of products. The first case study represents a financial firm with distributed call centers, including outsourcer call centers. The second is a large distribution and retail company that supports retail call center operations for its customers.

The business requirements were used to design and configure two test beds with sites that reflect these sample business models. The sites were installed with contact center components for testing and verification of the systems designed for these business models.

The testing focuses in varying degrees on performance and behavior issues such as:

- End-to-end functionality
- Interoperability
- Reliability
- Redundancy
- Stability
- Upgradeability
- Stress
- Load
Sample Business Case Studies

Two sample case studies with business requirements were defined to design contact center call flows, and the software and hardware topologies that would support these call flows.

- Financial Business Case Study—Cisco Unified Communications Manager (formerly known as Unified CallManager) Post-Routed call flow and Parent/Child call flow
- Retail Business Case Study—Cisco Unified Customer Voice Portal (Unified CVP) Post-Routed call flow

While these case studies are based on (and derived from) financial and retail industries, the information discussed here can be applicable to other industries, such as health care, manufacturing, and so on.

Deployment models, site configurations, and complex scripting for the call flows were developed from the business requirements.

Deployment models and test sites for both business models are described in detail in Test Deployment Models and Sites.

Tested Call Flows discusses the specifics of testing call flows and the configuration tasks required to set up these call flows.

This topic has the following sections:

- Financial Business Case Study
- Retail Business Case Study

Financial Business Case Study

Global Siren Financial (GSF), a global multi-billion dollar financial services firm, offers the following services to its customers:

- Brokerage services
- Securities sales
- Internet banking
- Account and collection services

Call Centers or Sites

GSF depends on its call centers to be the primary interface to its customers and brokers who resell their securities in the United States. The brokers need to have a reliable, cost effective, and efficient way to manage their customer contacts across the eight contact center sites. These sites participate in the Unified Communications Manager Post-Routed call flow testing.

For ease of use, the site names have been mapped to specific site numbers. Table 1 lists the site name, the site number, the number of agents, and number of agents per Unified Communications Manager cluster, and the Busy Hour Call Attempt (BHCA) at each of the eight sites.

Note: BHCA numbers include all traffic; including inbound, outbound, transfer, and conference call volume.
Note
With Cisco Remote Agent functionality, one remote agent located at Site8, who is associated with Site2, handles calls coming into Site1 and Site4 based on the skill group assignment. With Cisco Unified Mobile Agent (Unified MA) functionality, 300 mobile agents “grouped” in Site7 (a virtual call center) use their regular PSTN or cell phones to accept and handle call center calls.

Cisco Unified Mobile Agents

The 300 mobile agents in Site7 are part of a GSF Pandemic Response Team created to ensure call center operations are not disrupted when a major emergency event could close the formal call centers. The mobile agents are grouped in skill groups modeled after Site2 and Site3 GSF customer service teams, but are distributed across the country. These agents use a Cisco Enterprise Class Teleworker (871) VPN router at home with a cable modem for data connectivity and a GSF-supplied local POTS line to ensure voice quality for their calls.

There are 15 mobile outbound agents associated with Site6 using the GSF remote teleworker model and a dedicated POTS line to make outbound calls to customers.

Outsourced Call Center Services

However, over the years, GSF has noticed a decline in call volumes at the call centers as more customers use GSF’s web site for services. Rather than closing or consolidating the call centers, GSF has contracted their services on an outsourced basis to one of their partner companies, Siren Supplies and Stores (SS&S).

SS&S has modified their carrier-based routing plans to divert calls automatically by dialed number to agent groups in two outsourcer sites, without consulting the SS&S contact center system first. Calls for these outsourcer agents are routed directly to the sites, with a 50/50 split between the two sites.
Table 2 lists the site name, the site number, the number of outsourcer agents, and the BHCA at the sites that have been set up to offer call center services on a contract basis.

### Table 2  Number of Outsourcer Agents at Sites (Site5 and Site9)

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site</th>
<th>Number of Outsourcer Agents</th>
<th>Outsourcer BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clover, UT [small data center and call center]</td>
<td>Site5</td>
<td>160</td>
<td>2,880</td>
</tr>
<tr>
<td>Carson City, NV [small data center and call center]</td>
<td>Site9</td>
<td>117</td>
<td>2,106</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>277</strong></td>
<td><strong>4,986</strong></td>
</tr>
</tbody>
</table>

At Site5, specific agent and skill groups have been set up for the outsourcer agents who service SS&S customers only. In addition to these outsourcer agents, Site5 still has dedicated GSF agents that handle inbound GSF customer calls. There is no blending of these core GSF agents with the outsourcer agents at this site.

Site9 has no GSF agents. All agents at this site are outsourcer agents that service only SS&S customers.

### Administrative Phones

Additionally, at each site, there are a number of administrative phones in conference rooms, break rooms, and manager offices. These phones generate a minimal amount of call volume, but need to be represented in the test environment to model “real” call center operations.

Table 3 lists the number of administrative phones and the BHCA for the administrative phones per site.

### Table 3  Number of Administrative Phones/BHCA

<table>
<thead>
<tr>
<th>Site Name</th>
<th>Site</th>
<th>Number of Admin Phones</th>
<th>BHCA for Admin Phones</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canton, KS [multi-site hub/data center]</td>
<td>Site1</td>
<td>50</td>
<td>125</td>
</tr>
<tr>
<td>Chicago, IL [call center and remote of Site1]</td>
<td>Site2</td>
<td>16</td>
<td>60</td>
</tr>
<tr>
<td>Clifton, TX [call center and remote of Site1]</td>
<td>Site3</td>
<td>29</td>
<td>72</td>
</tr>
<tr>
<td>Clinton, MO [multi-site hub/data center]</td>
<td>Site4</td>
<td>45</td>
<td>113</td>
</tr>
<tr>
<td>Clover, UT [small data center and call center]</td>
<td>Site5</td>
<td>5</td>
<td>12</td>
</tr>
<tr>
<td>Carefree, AZ [call center and remote of Site5]</td>
<td>Site6</td>
<td>8</td>
<td>15</td>
</tr>
</tbody>
</table>

**Outsourcer Sites**

| Clover, UT [small data center and call center] | Site5    | 8 | 20 |
| Carson City, NV [small data center and call center] | Site9    | 5 | 12 |
As with any typical telephony implementation, a standard amount of conferences and transfers are performed using the administrative phones within the same site. To model the traffic appropriately, total transfers and conferences are estimated at 5% of the total BHCA for the administrative phones.

**Services and Skill Groups**

Table 4 lists the services that the agents at the call centers provide to the customers of GSF.

### Table 4 Services, Activities, and Locations

<table>
<thead>
<tr>
<th>Skill #</th>
<th>Service</th>
<th>Activity</th>
<th>Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>01</td>
<td>Account Inquiry</td>
<td>Statement Review, Balance Inquiry</td>
<td>All locations including mobile agents in Site7, except Carson City (Site9)</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>Note: Additionally, sub-groups have been created within this skill group to receive transfer and conference calls from other groups</td>
</tr>
<tr>
<td>02</td>
<td>Literature Request</td>
<td>Process requests for new prospectus and other literature for customers</td>
<td>All locations including mobile agents in Site7, except Carson City (Site9)</td>
</tr>
<tr>
<td>04</td>
<td>Member Banking</td>
<td>Internet Banking Service for customers</td>
<td>All locations including mobile agents in Site7, except Carson City (Site9)</td>
</tr>
<tr>
<td>05</td>
<td>Customer Collections</td>
<td>Credit Card collections and account services</td>
<td>Only Carefree (Site6) (has a group of dedicated agents for outbound calls)</td>
</tr>
</tbody>
</table>

**Cross-Trained Agents**

GSF has cross-trained the majority of their agents at the various call center sites to provide a variety of account services to both end-customers and brokers who resell their securities.

**Note**

There are no agents handling calls at Canton (Site1) and Clinton (Site4); these are just data centers.

GSF offers a banking service to its customers with traditional checking, savings, and investment options like money market and 401K accounts as an *internet bank* with no traditional branch banking locations.

**Chicago and Clifton Agents**

The call centers in the Chicago (Site2) and Clifton (Site3) sites are set up to handle the above customer calls and services. These sites use the Computer Telephony Integration Object Server (CTI OS) Desktop Applications to handle call control functions.

**Clover and Carefree Agents**

Agents in the Clover (Site5) and Carefree (Site6) sites are also set up to handle similar calls, but use Cisco Agent Desktop (CAD) Applications for call control functions. A group of dedicated agents in Carefree (Site6) perform only outbound collection calls on their customer credit card accounts.

**Clover and Carson City Agents**
A separate group of agents at the Clover (Site5) location are set up as outsourcer agents to handle calls from and provide services to SS&S customers only. Agents at this site use CTI OS Applications for call control functions.

Agents at Carson City (Site9) are set up exclusively as outsourcer agents and do not take any calls from GSF customers, only from its partner company, SS&S. Agents at this site use CAD Applications for call control functions.

Remote and Mobile Agents
Site8 is set up as a remote agent site to function like Site2 and handle calls that are routed to Site2. Site6 has a small group of 15 mobile agents that perform outbound calling from their remote phones. Site7 acts as a virtual call center for all mobile agents associated with the call center sites that use their regular PSTN or cell phones to handle call center calls.

Site and Agent Profiles
All the sites discussed in this section are open 24x7. The number of agents listed in the tables are the number of staffed agents per shift.

Note
Canton (Site1) and Clinton (Site4) are data centers, and therefore, do not have any agents.

Chicago, IL (Site2)
The following is a brief summary of Site2-relevant information:
- Has 484 agents who use CTI OS Desktop Application
- Handles Unified Communications Manager Post-Routed calls
- Uses Customer Response Solutions (CRS) in Site1/Site4 for call treatment and queuing
- Uses Unified Communications Manager cluster in Site1/Site4 for call processing
- Operates as a call center for GSF customers

Table 5 lists the skill sets of the agents at the Chicago site (total BHCA: 8,694) and the agent to BHCA numbers.

### Table 5 Agent Profile for Chicago (Site2)

<table>
<thead>
<tr>
<th>Call Flow</th>
<th>Skill Group and Service</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#21101 – Account Inquiry</td>
<td>152</td>
<td>2,718</td>
</tr>
<tr>
<td>Call Flow #1b</td>
<td>#21202 – Literature Request</td>
<td>91</td>
<td>1,638</td>
</tr>
<tr>
<td>Call Flow #1d</td>
<td>#21404 – Member Banking</td>
<td>211</td>
<td>3,798</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#22101X – Transfers from Clifton (Site3)</td>
<td>10</td>
<td>180</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#22101C – Conferences from Clifton (Site3)</td>
<td>10</td>
<td>180</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#22102X – Transfers from Mobile Agents (Site7)</td>
<td>5</td>
<td>90</td>
</tr>
</tbody>
</table>
Table 5  

<table>
<thead>
<tr>
<th>Call Flow</th>
<th>Skill Group and Service</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #2a</td>
<td>#22102C – Conferences from Mobile Agents (Site7)</td>
<td>5</td>
<td>90</td>
</tr>
</tbody>
</table>

Clifton, TX (Site3)  

The following is a brief summary of Site3-relevant information:
- Has 597 agents who use CTI OS Desktop Application
- Handles Unified Communications Manager Post-Routed calls
- Uses CRS in Site1/Site4 for call treatment and queuing
- Uses Unified Communications Manager cluster in Site1/Site4 for call processing
- Operates as a call center for GSF customers

Table 6 lists the skill sets of the agents at the Clifton site (total BHCA: 10,746) and the agent to BHCA numbers.

Table 6  

<table>
<thead>
<tr>
<th>Call Flow</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#31101 – Account Inquiry</td>
<td>155</td>
<td>2,790</td>
</tr>
<tr>
<td>Call Flow #1b</td>
<td>#31202 – Literature Request</td>
<td>97</td>
<td>1,746</td>
</tr>
<tr>
<td>Call Flow #1d</td>
<td>#31404 – Member Banking</td>
<td>315</td>
<td>5,670</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#32101X – Transfers from Chicago (Site2)</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#32101C – Conferences from Chicago (Site2)</td>
<td>5</td>
<td>90</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#32102X – Transfers from Mobile Agents (Site7)</td>
<td>10</td>
<td>180</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#32102C – Conferences from Mobile Agents (Site7)</td>
<td>10</td>
<td>180</td>
</tr>
</tbody>
</table>

Clover, UT (Site5)  

The following is a brief summary of Site5-relevant information:
- Has 117 core agents who use CAD Desktop Application to service GSF customers
- Has 160 outsourcer agents who use CTI OS Desktop Application to service SS&S customers
- Handles Unified Communications Manager Post-Routed and Parent/Child calls
- Has its own CRS for call treatment and queuing for both types of calls
- Has its own Unified Communications Manager cluster for call processing
- Operates as a data center and a call center for both GSF and SS&S customers

Table 7 lists the skill sets of the agents at the Clover site and the agent to BHCA numbers.
Carefree, AZ (Site6)

The following is a brief summary of Site6-relevant information:

- Has a total of 160 agents who use CAD Desktop Application
- Has 108 (including 15 mobile) dedicated agents who place outbound calls to customers for collection services
- Handles Unified Communications Manager Post-Routed calls
- Uses CRS in Site5 for call treatment and queuing
- Uses the Unified Communications Manager cluster in Site5 for call processing
- Operates as a call center for both inbound and outbound calls

For the outbound agents in this site that are dedicated to the Customer Collections skill group, the expected call distribution numbers with customers are as follows:

- Calls Answered: 1,944 (30% of call volume)
- Calls Busy: 2,268 (35% of call volume)
- Calls Not Answered: 2,268 (35% of call volume)
- Total Calls Dialed: 6,480

The following recorded message (timed to play for 60 seconds) is played for customer calls that are answered by an answering machine:

Table 7  Agent Profile for Clover (Site5)

<table>
<thead>
<tr>
<th>Call Flow</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Core Agents for GSF Customers (total BHCA: 2,106)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call Flow #1a</td>
<td>#51101 – Account Inquiry</td>
<td>25</td>
<td>450</td>
</tr>
<tr>
<td>Call Flow #1b</td>
<td>#51202 – Literature Request</td>
<td>6</td>
<td>108</td>
</tr>
<tr>
<td>Call Flow #1d</td>
<td>#51404 – Member Banking</td>
<td>72</td>
<td>1,296</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#52201X – Transfers from Carefree (Site6)</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#52201C – Conferences from Carefree (Site6)</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#52202X – Transfers from Mobile Agents (Site7)</td>
<td>4</td>
<td>72</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#52202C – Conferences from Mobile Agents (Site7)</td>
<td>4</td>
<td>72</td>
</tr>
<tr>
<td>Outsourcer Agents for SS&amp;S Customers (total BHCA: 2,880)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call Flow #4a</td>
<td>#5401 – Distribution Center Catalog Orders</td>
<td>42</td>
<td>756</td>
</tr>
<tr>
<td>Call Flow #4b</td>
<td>#5402 – Distribution Center Order Status</td>
<td>47</td>
<td>846</td>
</tr>
<tr>
<td>Call Flow #4c</td>
<td>#5408 – Retail Center Technical Support</td>
<td>71</td>
<td>1,278</td>
</tr>
</tbody>
</table>
“We have an important message for you. Please contact Global Siren Financial Bank immediately at 1-888-555-1212. Thank you.”

Table 8 lists the skill sets of the agents at the Carefree site (total BHCA: 2,880) and the agent to BHCA numbers.

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#61101 – Account Inquiry</td>
<td>19</td>
<td>342</td>
</tr>
<tr>
<td>Call Flow #1b</td>
<td>#61202 – Literature Request</td>
<td>1</td>
<td>18</td>
</tr>
<tr>
<td>Call Flow #1d</td>
<td>#61404 – Member Banking</td>
<td>18</td>
<td>324</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#62201X – Transfers from Clover (Site5)</td>
<td>4</td>
<td>72</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#62201C – Conferences from Clover (Site5)</td>
<td>4</td>
<td>72</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#62202X – Transfers from Mobile Agents (Site7)</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#62202C – Conferences from Mobile Agents (Site7)</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Call Flow #3a – Customer Collection</td>
<td>#63101 – Collections</td>
<td>108</td>
<td>1,944</td>
</tr>
</tbody>
</table>

Table 8 Agent Profile for Carefree (Site6)

Virtual Call Center (Site7)

A virtual site was created to “group” all the mobile agents associated with the call center. The following is a brief summary of Site7-relevant information:

- Has 300 mobile agents who use regular PSTN or cell phones and CTI OS Agent Desktop to handle customer calls
- Uses CRS in Site1/Site4 for call treatment and queuing
- Uses the Unified Communications Manager cluster in Site1/Site4 for call processing
- Operates as a virtual call center for inbound calls
- Mobile Agents can transfer and conference calls to agents at Site2, Site3, Site5, and Site6.

Table 9 lists the skill sets of the mobile agents in the virtual call center (total BHCA: 5,400) and the agent to BHCA numbers.

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#71101 – Account Inquiry</td>
<td>145</td>
<td>2,610</td>
</tr>
<tr>
<td>Call Flow #1b</td>
<td>#71202 – Literature Request</td>
<td>30</td>
<td>540</td>
</tr>
<tr>
<td>Call Flow #1d</td>
<td>#71404 – Member Banking</td>
<td>125</td>
<td>2,250</td>
</tr>
</tbody>
</table>
At-Home/Telecommuter Site (Site8)

A Cisco Remote Agent is located in Site8. Essentially, Site8 can be considered an extension of the call center at Site2 and provides support to GSF customers based on the skill group assignment.

Carson City, NV (Site9)

The following is a brief summary of Site9-relevant information:

- Has 117 agents who use CAD Desktop Application
- Handles Parent/Child calls
- Has its own CRS for call treatment and queuing
- Has its own Unified Communications Manager cluster for call processing
- Operates as a data center and call center for SS&S customers only

Table 10 lists the skill sets of the agents at the Carson City site (total BHCA: 2,106) and the agent to BHCA numbers.

### Table 10  Agent Profile for Carson City (Site9)

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #4a</td>
<td>#9401 – Distribution Center Catalog Orders (outsourcer agents only)</td>
<td>27</td>
<td>486</td>
</tr>
<tr>
<td>(outsourced calls)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call Flow #4b</td>
<td>#9402 – Distribution Center Order Status (outsourcer agents only)</td>
<td>32</td>
<td>576</td>
</tr>
<tr>
<td>(outsourced calls)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Call Flow #4c</td>
<td>#9408 – Retail Center Technical Support (outsourcer agents only)</td>
<td>58</td>
<td>1,044</td>
</tr>
<tr>
<td>(outsourced calls)</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Sample Cisco Unified Communications Manager Post-Routed Call Flows

The four types of sample call flows discussed in this section are as follows:

- **Call Flow #1: General Information Calls (Inbound)**
  - Call Flow #1a—Account Inquiry Skill Group
  - Call Flow #1b—Literature Request Skill Group
  - Call Flow #1d—Member Banking Skill Group
- **Call Flow #2: Agent-Initiated Calls (Conference/Transfers)**
  - Call Flow #2a—Conference/Transfer to Another Skill Group
- **Call Flow #3a: Collection Calls (Outbound)**
- **Call Flow #4: Outsourced (SS&S) Calls**
  - Call Flow #4a—Distribution Center Catalog Orders Skill Group
  - Call Flow #4b—Distribution Center Orders Status Skill Group
  - Call Flow #4c—Retail Center Computer Technical Support Skill Group
Call Handling Overview

Agents and the Unified Communications Manager clusters at the sites handling the call flows are set up as follows:

- **Unified Communications Manager Cluster #1:**
  - Unified Communications Manager cluster (CoW) at Site1/Site4
  - Agents are at Site2, Site3, Site 7, and Site8
  Traffic between Site1/Site4 and Site2, Site3, and Site8 (in Cluster 1) is considered *intra-cluster* or occurring within their *home* cluster.

- **Unified Communications Manager Cluster #2:**
  - Unified Communications Manager cluster at Site5
  - Agents are at Site5 and Site6
  Traffic between Site5 and Site6 is considered intra-cluster or occurring within their home cluster.

- **Unified Communications Manager Cluster #3:**
  - Unified Communications Manager cluster at Site9
  - Agents are at Site9
  Traffic between Site1/Site4 and Site5 (occurring between Cluster 1 and Cluster 2) is considered *inter-cluster* or crossing between clusters.

Typically, all call flows have inbound BHCA targeted for each specific site. As such, there should be adequate agents at each site to handle the inbound local BHCA sent to that site. Furthermore, specific skill groups and sites are identified as targets for call *overflow* which occurs when agents are not available at the site that the call originally came in at (local site).

When a call arrives at the local site and agents are unavailable, the system checks for available agents in that skill group at other clustered sites. When selecting an overflow site, agents that belong to the home cluster are preferred over agents in a different cluster.

For instance, using the agent and cluster set up described above, a call that comes into Site5 is first sent to agents at Site5. If agents are unavailable at Site5, then the call is sent to available agents at Site6. If agents are not available at this site either, then the call is sent to agents at Site2, Site3, or Site8.

If agents are not available at any of the sites, the call is usually queued for an agent in that skill group at the local site (Site5 in this example). However, calls can be handled in a variety of ways depending on the call treatment logic and rules.

See **Summary of Call Handling and Queueing** to understand how calls are handled for the sample call flows described in this section.

**Call Flow #1: General Information Calls (Inbound)**

GSF provides its customers with toll-free numbers to call into their regional contact centers. Customers who call into these access numbers are presented with a menu of choices. Based on the selection they make, they are transferred to the agents at that site who provide that service for that region.

Agents and the Unified Communications Manager clusters at the sites handling the Unified Communications Manager Post-Routed call flow are set up as follows:

- **Unified Communications Manager Cluster #1:** Agents at Site2, Site3, Site7, and Site8
- **Unified Communications Manager Cluster #2:** Agents at Site5 and Site6
Table 11 provides a list of the sites and their local access numbers, estimated BHCA, and agents per site for General Information Requests lines.

**Table 11  General Information Request Local Lines**

<table>
<thead>
<tr>
<th>Site</th>
<th>Local Number</th>
<th>Est. BHCA / Site</th>
<th>Agents / Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chicago, IL (Site2)</td>
<td>773-212-4635 (INFO)</td>
<td>8,154</td>
<td>484 (plus 1 remote agent at Site8)</td>
</tr>
<tr>
<td>Clifton, TX (Site3)</td>
<td>254-352-4635 (INFO)</td>
<td>10,206</td>
<td>597</td>
</tr>
<tr>
<td>Clover, UT (Site5)</td>
<td>435-233-4636 (INFO)</td>
<td>1,854</td>
<td>117</td>
</tr>
<tr>
<td>Carefree, AZ (Site6)</td>
<td>480-321-4636 (INFO)</td>
<td>684</td>
<td>160 (108 are dedicated agents for outbound calls including 15 mobile agents)</td>
</tr>
<tr>
<td>Virtual Call Center (Site7)</td>
<td>254-352-5535</td>
<td>5,400</td>
<td>300 (mobile agents)</td>
</tr>
</tbody>
</table>

**Note**

All the BHCA numbers above are for inbound Unified Communications Manager Post-Routed calls; no outbound or conference/transfer call volume is included.

**Call Flow Logic**

The CRS plays the following series of prompts and messages (of 10 second duration) for calls that come into the call centers:

“Thank you for calling Global Siren Financial. Please select from one of the following services:

For your current account information and balances, press 1
To request information on any of our banking or brokerage services, press 2
To speak to a personal banker, press 3
Or stay on the line to be transferred to a personal banker.”

If the caller presses:

- 1 and an agent is available for that skill group, the call is routed to any agent at the local site who has the ‘x1101 – Account Inquiry Skill.’
- 2 and an agent is available for that skill group, the call is routed to any agent at the local site who has the ‘x1202 – Literature Request Skill.’
- 3 and the agent is available for that skill group, the call is routed to any agent at the local site who has the ‘x1404 – Member Banking Skill.’
- An invalid selection, the system transfers the call to any agent in any site with the ‘x1404 – Member Banking Skill.’

If the user does not make a selection when prompted, after multiple requests for a response, the system plays a courtesy message and disconnects the user.

**Call Handling and Queueing**

GSF has published toll-free numbers for each regional area to encourage local contact with the regional call centers. All calls coming into these toll free numbers will be designated to the specific site (or cluster of sites) the call arrived at. For example, calls from the Chicago (Site2) toll-free number are targeted to be answered by an agent in that skill group at that site (based on the longest available or most idle agent).
If there are no available agents, the call stays in a call queue at that site for the next available agent. Unnecessary intra-site call transfers and network usage are avoided by keeping the calls “local.”

Unanswered calls remain in their respective queues, regardless of the length of time they are in queue. The number of calls in any of these queues is controlled by a variable in an admin script, which varies based upon conditions such as agent-to-call ratios, and so on.

If there are more than 20 calls in any of these queues, the caller hears an announcement before being put on hold:

“We are experiencing heavier than normal call volumes. There are << number of calls inserted from real time feed >> ahead of you in this queue. You may wish to call back later for faster service.”

The system does not terminate this call. Callers who wish to wait are allowed to continue to hold in queue once this message is played. It is up to the caller’s discretion to hang up and terminate the call.

**Agents/BHCA to Skill Group Breakdown**

For the local-line inbound traffic dealing with General Information Requests, Table 12 lists the BHCA and the number of agents available for each of the related skill groups at Chicago, Clifton, Clover, and Carefree.

---

*Note* The BHCA listed in this table is per site. The BHCA and agent numbers listed in this table for the different sites do not include any outsourced information.

<table>
<thead>
<tr>
<th>Site</th>
<th>BHCA/Agents</th>
<th>X1001-Acct</th>
<th>X1002-Lit</th>
<th>X1004-Bank</th>
<th>Collections</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site2</td>
<td>BHCA</td>
<td>2,718</td>
<td>1,638</td>
<td>3,798</td>
<td>n/a</td>
<td>8,154</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>151</td>
<td>91</td>
<td>211</td>
<td></td>
<td>484</td>
</tr>
<tr>
<td>Site3</td>
<td>BHCA</td>
<td>2,790</td>
<td>1,746</td>
<td>5,670</td>
<td>n/a</td>
<td>10,206</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>155</td>
<td>97</td>
<td>315</td>
<td></td>
<td>597</td>
</tr>
<tr>
<td>Site5</td>
<td>BHCA</td>
<td>450</td>
<td>108</td>
<td>1,296</td>
<td>n/a</td>
<td>1,854</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>25</td>
<td>6</td>
<td>72</td>
<td></td>
<td>117</td>
</tr>
<tr>
<td>Site6</td>
<td>BHCA</td>
<td>342</td>
<td>18</td>
<td>324</td>
<td>6,480 (outbound calls)</td>
<td>684</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>19</td>
<td>1</td>
<td>18</td>
<td>108 (outbound agents)</td>
<td>160</td>
</tr>
<tr>
<td>Site7</td>
<td>BHCA</td>
<td>2,610</td>
<td>540</td>
<td>2,250</td>
<td>n/a</td>
<td>5,400</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>145</td>
<td>30</td>
<td>125</td>
<td></td>
<td>300</td>
</tr>
</tbody>
</table>
**Call Flow #2: Agent-Initiated Calls (Conference/Transfers)**

Once a call is answered by an agent, the agent may need to perform additional call processing manually using the conference and transfer features of contact center functionality.

Based on historical volumes, GSF expects that agents will need to transfer 2.5% of all calls terminating with them using a post-route that they have initiated. Additionally, another 2.5% of conferences would be comprised of premium customers, who are identified by the system when they call a special toll-free number. The original agent, as a courtesy, would conference premium customer calls to the agent from the second skill group, instead of doing a blind transfer.

Typically, calls conference/transfer between agent groups are designated to the same service or Unified Communications Manager cluster. For instance, Chicago (Site2) calls that transfer or conference typically only go to Clifton (Site3) as intra-cluster traffic. In the same manner, Clover (Site5) calls only go to Carefree (Site6).

Approximately, a total of 5% of calls are transferred and/or conferenced from Chicago (Site2) to Clifton (Site3) and from Clover (Site5) to Carefree (Site6).

**Call Flow #2a – Conference/Transfer to Another Skill Group**

When callers mistakenly select wrong menu choices or dial wrong numbers, the agent taking the call may need to re-direct the caller to a different agent in a specific skill group to handle their request.

Rather than asking the customer to call back, GSF wants the agents to re-qualify calls using the same routing logic that would have been used if the caller had made the correct choice initially.

Agents at all the sites use the Cisco Unified Intelligent Contact Management (Unified ICM) Dialed Number Plan and CTI OS/CAD Desktop Applications for re-routing calls to another agent group.

Calls from Call Flow #1 are the most likely to require re-direction to a different site because of caller or system error. Other call types are handled on an exception basis.

The dial plan handling this type of a call initiates the transfer/conference to a local group first before considering agents at other sites within the same cluster or a different cluster. If no agents are available, the call is queued at the CRS in the home cluster for an agent in the new group, but at a higher priority, as the caller may already have waited in queue for an agent, prior to the transfer.

**Call Handling and Queueing**

An example of this type of transfer is as follows:

1. A caller presses 1 accidently when really wanting to press 3. The caller is routed to the Account Inquiry group instead of the Member Banking group at Chicago (Site2).

2. The caller explains the service required to the Account Inquiry agent who takes the call.

3. The agent realizes that customer has made the wrong selection and a transfer is required to route the caller to the Member Banking group.

4. The agent uses the system transfer numbers listed in Table 13 to transfer the call to the correct agent group.

<table>
<thead>
<tr>
<th>Table 13 System Transfer Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>To move a call to the … group</strong></td>
</tr>
<tr>
<td>Account Inquiry</td>
</tr>
<tr>
<td>Literature Request</td>
</tr>
</tbody>
</table>
Test Case Studies

Sample Business Case Studies

Table 13  System Transfer Numbers (continued)

<table>
<thead>
<tr>
<th>To move a call to the … group</th>
<th>Use Conference/Transfer and press…</th>
</tr>
</thead>
<tbody>
<tr>
<td>Member Banking</td>
<td>4004</td>
</tr>
<tr>
<td>Brokerage Service</td>
<td>4007</td>
</tr>
</tbody>
</table>

Note Not all sites use a four-digit dial plan as shown in the example above. For those contact centers that use longer dialing plans, use the appropriate number plan.

5. If dealing with a VIP customer, the agent can conference to stay on the line with the customer and introduce the customer to the new (Member Banking) agent. This is a consultative transfer.

6. The system then searches for Member Banking agents as follows:
   - If an agent from this group is not available at Chicago (Site2), the system considers agents at other sites in the intra-cluster grouping, that is, at Clifton (Site3).
   - If no agents are available in that skill group at the other location, the system will search for available agents in the inter-cluster sites (Site6).
   - If no agents are available at any of the sites, the system queues the call at the current location for an agent in the local site (Site2).

Once the call is queued, the system plays an announcement telling the caller the number of calls already in queue for this service (using a real-time message).

Note Sometimes, when a site accepts calls from multiple remote sites, a specific skill group may be set up and designated to accept just this inbound re-directed traffic.

Call Flow #3a: Collection Calls (Outbound)

The outbound Collections skill group performs follow-up calls to GSF customers. The Collections group at Carefree (Site6) has 108 dedicated agents (including 15 mobile agents) who make outbound calls using the Collections campaign.

A group of 108 agents make an estimated 1300 BHCA outbound calls. The number refers to the number of successful calls, which is estimated at 30% of the total calls placed by the Cisco Unified Outbound Dialer (Unified OUTD) as shown below:

- Calls Answered: 1,300 (30% of call volume)
- Calls Busy: 1,519 (35% of call volume)
- Calls Not Answered: 1,519 (35% of call volume)
- Total Calls Dialed: 4,338

Call Handling and Queueing

Outbound calls are handled by a predictive dialer where the system dials several calls at once. This is done since some of the calls do not complete due to bad numbers, busy lines, etc. When a customer answers the call, an agent is immediately connected to the customer to perform the collections request.

If the customer asks the agent to call back later, the agent can set up the system in one of two ways:
   - Use the personal callback feature, to call the customer back at a scheduled time.
Use the system callback feature, to have the system call the customer back at a scheduled time and connect the customer with any available agent in the Collections group.

At the Carefree (Site6) site, calls are made in the Predictive Mode, using agents from the ‘63101 – Collections’ group to make the outbound collection calls as well as take any inbound calls meant for this skill group assignment.

If the outbound Campaign detects an answering machine, the system plays the following 60-second message to the customer before terminating the call:

“We have an important message for you – please contact Global Siren Financial Bank immediately at 1-888-555-1212. Thank you.”

Call Flow #4: Outsourced (SS&S) Calls

GSF has assigned outsourcer agents at Site5 and Site9 to handle overflow calls from their partner company, Siren Supplies & Stores. Customers calling into SS&S are diverted at the carrier network to the GSF locations by dialed number.

Table 14 provides a list of the sites and their internal redirect numbers, estimated BHCA, and agents per site for the outsourced calls.

Table 14  Outsourcer Agents at GSF Site5 and Site9

<table>
<thead>
<tr>
<th>Site</th>
<th>Internal Redirect Number</th>
<th>Est. BHCA / Site</th>
<th>Agents / Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Clover, UT (Site5)</td>
<td>919-232-5211 (Distribution Center and Retail Store Calls)</td>
<td>2,880</td>
<td>160</td>
</tr>
<tr>
<td>Carson City, NV (Site9)</td>
<td>919-552-3208 (Distribution Center and Retail Store Calls)</td>
<td>2,106</td>
<td>117</td>
</tr>
</tbody>
</table>

Note Customers do not actually have to dial these internal redirect numbers. The carrier routes these calls on a percent allocation basis. The carrier splits them (50%/50%), for load-balancing purposes, between the two GSF data center locations (Site1 and Site4).

Call Flow Logic

The CRS plays the following series of prompts and messages (of 10 second duration) for the calls coming into the outsourcer GSF sites:

“Thank you for calling Siren Supplies & Stores, your call may be recorded for quality purposes.”

If the call came in on the:

- Distribution Center Catalog Orders line (919-232-5211) and an agent is available for that skill group, the call is routed to any agent at any of the two sites who has the ‘x401 – Distribution Center Catalog Orders Skill.’

- Distribution Center Orders Status line (919-232-5212) and an agent is available for that skill group, the call is routed to any agent at any of the two sites who has the ‘x402 – Distribution Center Orders Status Skill.’

- Retail Center Computer Technical Support line (919-552-3208) and the agent is available for that skill group, the call is routed to any agent at any of the two sites who has the ‘x408 – Retail Center Computer Technical Support Skill.’
If agents are not available at any location, the call is held in queue for the next available agent at the site where the call came in.

Call Handling and Queueing

If there are no available agents, the call stays in a call queue at that site for the next available agent.

Unanswered calls remain in their respective queues, regardless of the length of time they are in queue.

The number of calls in any of these queues is controlled by a variable in an admin script, which varies based upon conditions such as agent-to-call ratios, etc.

If there are more than 20 calls in any of these queues, the caller hears an announcement before being put on hold:

“We are experiencing heavier than normal call volumes. There are << number of calls inserted from real time feed >> ahead of you in this queue. You may wish to call back later for faster service.”

The system does not terminate this call. Callers who wish to wait are allowed to continue to hold in queue once this message is played. It is up to the caller’s discretion to hang up and terminate the call.

Agents /BHCA to Skill Group Breakdown

For the local-line inbound traffic dealing with redirected outsourced calls, Table 15 lists the BHCA and the number of outsourcer agents available for each of the related skill groups at Culver and Carson City.

Note

The BHCA listed in this table is for the outsourcer sites. The numbers listed in this table for Site5 does not include any core BHCA or agent information.

<table>
<thead>
<tr>
<th>Site</th>
<th>BHCA/Agents</th>
<th>X01-Cat Orders</th>
<th>X02-Ord Status</th>
<th>X08-Tech Spt</th>
<th>Total</th>
</tr>
</thead>
<tbody>
<tr>
<td>Site5</td>
<td>BHCA</td>
<td>756</td>
<td>846</td>
<td>1,278</td>
<td>2,880</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>42</td>
<td>47</td>
<td>71</td>
<td>160</td>
</tr>
<tr>
<td>Site9</td>
<td>BHCA</td>
<td>486</td>
<td>576</td>
<td>1,044</td>
<td>2,106</td>
</tr>
<tr>
<td></td>
<td>Agents</td>
<td>27</td>
<td>32</td>
<td>58</td>
<td>117</td>
</tr>
</tbody>
</table>

Emergencies and Special Situations

If a site has to be closed for an emergency, for instance, a bomb threat, a special site emergency skill group is defined with a specific agent associated with it. All the standard call flows check to make sure the emergency agent has not logged into the emergency skill group, before attempting to process the call for that site.

- If a site is closed in an emergency close situation, all calls ignore the local agents for that closed site and consider only agents from other sites, provided they are also not closed for the same reason. If all sites are in emergency close mode, the system acts as if the company is closed or outside of normal calling hours.

Calls queued for a site that is in emergency close will be requalified to select another site for the queue.
• If a site is not closed and is scheduled to be open, but the agents are unable to log in for some reason (snow storm, blackout, etc.), the system does not accept calls into the queues for that site and treats the site as if it was closed.

• If a site is closed due to a national holiday, customers’ calls into the contact centers are treated similar to the outside of normal calling hours closure and a message informs the caller that the company is closed for the holiday.

**Summary of Call Handling and Queueing**

Based on routing scripts defined by the business logic, it can be seen that the contact center system handles and queues different types of calls in a variety of ways.

*Table 16* summarizes this information and lists the different types of sample Unified Communications Manager Post-Routed call flows discussed previously, the sites that are eligible to handle them, and their treatment by the contact center system.

**Table 16**

<table>
<thead>
<tr>
<th>Call Flow#</th>
<th>Call Type</th>
<th>Eligible Sites</th>
<th>Call Treatment by System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1</td>
<td>General Requests</td>
<td>Local site only</td>
<td>• If agent is logged on and available, transfers directly to agent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Once queued locally, not permitted to cross to other sites, even within the same cluster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If more than 20 calls in queue, plays message to call back.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Caller must terminate call by hanging up.</td>
</tr>
<tr>
<td>Call Flow #2</td>
<td>Agent-Initiated Conf/Transfers</td>
<td>All sites (wherever the agent is located)</td>
<td>• If agent is logged on and available, transfers directly to agent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If agent is not logged on, plays message that agent is unavailable and terminates the call.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If agent is logged on but taking another call, places in queue for that agent and plays message to wait or terminate call.</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>Conf/Transfer to Another Skill Group</td>
<td>Local site first, then within “home” cluster, and then within clustered groupings</td>
<td>• Checks for and transfers to local agents who can immediately take the call.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If agent is unavailable locally, places in queue with higher priority and examines agent availability on other sites.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• While calls are in queue, announcement notifies caller of position in queue.</td>
</tr>
</tbody>
</table>
### Table 16  
Summary of Call Handling and Queueing for Unified Communications Manager Post-Routed Call Flow Sites (continued)

<table>
<thead>
<tr>
<th>Call Flow#</th>
<th>Call Type</th>
<th>Eligible Sites</th>
<th>Call Treatment by System</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #3a</td>
<td>Outbound Collection</td>
<td>Only Site6 handles outbound calls</td>
<td>• Uses predictive Unified OUTD.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If called party answers, connects call to agent.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If called party does not answer, does not try the call again within campaign time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If called party asks agent to call back, uses personal callback or system callback features to call customer back at scheduled time.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If answering machine is detected, system leaves message asking customer to call back and terminates call.</td>
</tr>
<tr>
<td>Call Flow #4</td>
<td>Outsourced Calls from SS&amp;S</td>
<td>Local site only (Site5 and Site9)</td>
<td>• Queues locally until agent is available.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Does not permit crossing to other sites, even within the same cluster.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• If more than 20 calls in queue, plays message to call back.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>• Caller must terminate call by hanging up.</td>
</tr>
</tbody>
</table>

- **Special Calls**
  - **Shutdown due to Emergency, Bad Weather, or Holiday**
  - **All sites**
  - • If the site is closed, does not consider the site for calls.
  - • If call is queued at closed site, reroutes to an open site.
  - • If all sites are closed, does not accept calls into queues, and plays site closed message.
Retail Business Case Study

This section describes the business profile and requirements of the sample retail business, Siren Supplies and Stores (SS&S), a large distribution and retail operations company. SS&S plans to deploy Cisco Unified Communications contact center family of products to replace aging equipment in distribution branch offices and retail centers nation-wide.

The SS&S business operations is set up as follows in the locations listed below:

- Data Centers—Two (2) data centers support the call centers and agents in the distribution/branch office and retail centers. There are no agents located at the data centers.

- Distribution Center/Branch Office—One (1) central distribution call center supports Business-to-Business or B2B operations and its agents provide national coverage for SS&S customers.

Using Cisco Unified Mobile Agent (Unified MA) functionality, SS&S Distribution Operations has assigned 200 agents to a Pandemic Disaster Team as part of a virtual call center. These agents can work either from home or at the distribution center. SS&S has set up these mobile agents with local POTS lines to enable them to work from home when a disaster prevents them from being at the distribution center.

Each agent has a laptop computer with a Cisco Enterprise Class Teleworker 871 VPN router attached to a cable modem or DSL connection in their home. Because QoS is not available on the high-speed cable service, SS&S has set up dedicated voice lines to each mobile agent’s home.

- Retail Centers—Three (3) retail super center support consumer retail operations for three major outlet locations. Each of the locations has call center agents assigned to specific skill groups within the center, based on their areas of product knowledge. Customers can call into the centers and speak to agents directly or use kiosks at various locations in the region.
  - In the Mid-Atlantic Retail Center (Site6), a small group of 73 blended agents (including 15 mobile agents) in the Retail Credit Account Collections skill group handle inbound retail and outbound credit collections calls.
  - Some retail center agents are subject matter experts that act as “backup” to the frontline agents when they are unable to handle certain customer issues. The frontline agents can conference the call with these special agents and, if necessary, transfer the call to them to handle.

- In the North-Central Retail Center (Site7), a small Unified Communications Manager cluster with 30 agents handle specific conference and transfer calls from the Mid-Atlantic Retail Center (Site6) and South-Central Retail Center (Site8) locations (with an approximate BHCA of 620).
  - In the South-Central Retail Center (Site8), 38 backup agents handle specific conference and transfer calls from Site6 and Site7 (with an approximate BHCA of 502).

Call Centers or Sites

The site names have been mapped to specific site numbers. These sites participate in the Unified CVP Post-Routed call flows testing.

Table 17 lists the various SS&S office sites, number of agents, and Unified Communications Manager clusters at each site, and the Busy Hour Call Attempt (BHCA) at each of the seven sites.

| Note | BHCA numbers include all traffic; including inbound, outbound, transfer, and conference call volume. |
Additionally, at each site, there are a number of administrative phones in conference rooms, break rooms, and manager offices. These phones generate a minimal amount of call volume, but need to be represented in the contact center environment to model “real” call center operations.

Table 18 lists the number of administrative phones and the Busy Hour Call Attempt (BHCA) for the administrative phones per site.
As with any typical Telephony implementation, a standard amount of conferences and transfers are performed using the administrative phones within the same site. To model the traffic appropriately, conferences and transfers are estimated at 5% of the total BHCA for the administrative phones.

**Services and Skill Groups**

Table 19 lists the services that the agents at the distribution centers and the retail centers provide to the customers of SS&S.

<table>
<thead>
<tr>
<th>Location Type</th>
<th>Skill #</th>
<th>Service</th>
<th>Activity</th>
<th>Specific Sites/Locations</th>
</tr>
</thead>
<tbody>
<tr>
<td>Distribution Center</td>
<td>01</td>
<td>Catalog Orders</td>
<td>Take new orders from the SS&amp;S Catalog</td>
<td>Distribution Center (Site3)</td>
</tr>
<tr>
<td>Distribution Center</td>
<td>02</td>
<td>Order Status</td>
<td>Answer inquiries on prior catalog orders</td>
<td>Distribution Center (Site3)</td>
</tr>
<tr>
<td>Distribution Center</td>
<td>03</td>
<td>Specialty Items</td>
<td>Take orders and handle inquiries on special items not available in all states</td>
<td>Distribution Center (Site3)</td>
</tr>
<tr>
<td>Retail Center</td>
<td>04</td>
<td>Retail Credit Account Collections</td>
<td>Retail Credit account collections</td>
<td>Mid-Atlantic Retail Center only (blended inbound and outbound) (Site6)</td>
</tr>
<tr>
<td>Retail Center</td>
<td>05</td>
<td>Electronics &amp; Personal Computers</td>
<td>Sales specialists trained in the SS&amp;S Consumer Electronics (TV, VCR, etc.)</td>
<td>All Retail Locations</td>
</tr>
<tr>
<td>Retail Center</td>
<td>06</td>
<td>Major Appliances</td>
<td>Sales specialists trained in the SS&amp;S Major Appliances lines</td>
<td>All Retail Locations</td>
</tr>
<tr>
<td>Retail Center</td>
<td>07</td>
<td>Music and Movies</td>
<td>Sales specialists trained in the SS&amp;S CD/ DVD/ VCR music and movies</td>
<td>All Retail Locations</td>
</tr>
<tr>
<td>Retail Center</td>
<td>08</td>
<td>Computer Technical Support</td>
<td>Specialists trained to help SS&amp;S customers requiring assistance setting up or using computers and electronics</td>
<td>All Retail Locations</td>
</tr>
</tbody>
</table>

**Note** The Speciality Items skill group in the distribution center (Site3) handles specific products that require additional mentoring and training. At these sites, supervisors require access to the silent monitor, barge-in, and intercept features and also the ability to record agent phone calls for quality assurance purposes.
SS&S has cross-trained the majority of their agents at the various call center sites to provide a variety of account services to customers.

**Note**
There are no agents handling calls at Chicago (Site1) and Dallas (Site5); these are data centers.

SS&S offers retail call center operations for its customers such as catalog and specialty item sales, retail centers with major appliances and electronics, and computer technical support.

**Distribution Center Agents**
The distribution center (Site3) is set up to handle customer calls and provide services based on their specific skill groups. This site uses the Cisco Agent Desktop (CAD) to handle call control functions.

**Retail Center Agents**
The agents in the retail centers in the Mid-Atlantic Retail Center (Site6), North-Central Retail Center (Site7), and South-Central Retail Center (Site8) locations are also set up to handle similar calls, but use CTI OS Desktop Applications for call control functions.

Blended agents (including mobile agents) in the Mid-Atlantic Retail Center (Site6) perform both inbound retail and outbound collection calls on their customer credit card accounts.

**Unified Mobile Agents**
Using Unified MA functionality, 200 mobile agents are associated with Site3 to handle customer calls and 15 mobile agents are associated with Site6 for outbound calling. Mobile agents have been assigned to specific mobile skill groups; however, supervisors can reassign mobile agents to a non-mobile skill group if the agent is assigned to work locally at Site3.

**Site and Agent Profiles**
All the sites discussed in this section are open 24x7. The number of agents listed in the tables are the number of staffed agents per shift.

**Note**
Chicago (Site1) and Dallas (Site5) are data centers, and therefore, do not have any agents.

**Virtual Call Center (Site2)**
A virtual site was created to “group” all the mobile agents associated with the call center. The following is a brief summary of Site2-relevant information:

- Has 200 mobile agents who use regular PSTN or cell phones and CAD Agent Desktop to handle customer calls
- Handles Unified CVP Post-Routed calls
- Uses CRS in Site1/Site5 for call treatment and queuing
- Uses the Unified Communications Manager cluster in Site1/Site5 for call processing
- Operates as a virtual call center for inbound calls
Table 9 lists the skill sets of the mobile agents in the virtual call center (total BHCA: 3,600) and the agent to BHCA numbers.

**Table 20**  
Agent Profile for Virtual Call Center (Site2)

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#301M – Distribution Center Catalog Orders</td>
<td>100</td>
<td>1,800</td>
</tr>
<tr>
<td>Call Flow #1a</td>
<td>#302M – Distribution Center Order Status</td>
<td>25</td>
<td>450</td>
</tr>
<tr>
<td>Call Flow #1a</td>
<td>#303M – Distribution Center Specialty Items</td>
<td>75</td>
<td>1,350</td>
</tr>
</tbody>
</table>

**Distribution Center (Site3)**

The following is a brief summary of Site3-relevant information:

- Has 300 agents who use CAD Desktop Application
- Handles Unified CVP Post-Routed calls
- Uses Unified CVP in Site1/Site5 for call treatment and queuing
- Has its own Unified Communications Manager cluster for call processing
- Operates as a small data center and call center

Table 21 lists the skill sets of the agents at the distribution center (total BHCA: 5,400) and the agent to BHCA numbers.

**Table 21**  
Agent Profile for Distribution Center (Site3)

<table>
<thead>
<tr>
<th>Call Flow</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #1a</td>
<td>#301 – Catalog Orders</td>
<td>208</td>
<td>3,744</td>
</tr>
<tr>
<td>Call Flow #1a</td>
<td>#302 – Order Status</td>
<td>22</td>
<td>396</td>
</tr>
<tr>
<td>Call Flow #1a</td>
<td>#303 – Specialty Items</td>
<td>70</td>
<td>1,260</td>
</tr>
</tbody>
</table>

**Mid-Atlantic Retail Center (Site6)**

The following is a brief summary of Site6-relevant information:

- Has 683 agents who use CTI OS Desktop Application
- Has 73 blended agents (including 15 mobile agents) who handle both inbound and outbound calls
- Handles Unified CVP Post-Routed calls
- Uses Unified CVP in Site1/Site5 for call treatment and queuing
- Uses Unified Communications Manager cluster in Site1/Site5 for call processing
- Operates as a call center
- Outbound agents at this site do not receive transfers or conferences from other sites.

For the outbound agents in this site that are dedicated to the Retail Credit Account Collections skill group, the expected call distribution numbers with customers are as follows:
Table 22 lists the skill sets of the agents at the Mid-Atlantic Retail Center (total BHCA:12,490) and the agent to BHCA numbers.

Table 22  
Agent Profile for Mid-Atlantic Retail Center (Site6)

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #3</td>
<td>#604 – Retail Credit Account Collections</td>
<td>73</td>
<td>1,314</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#605 – Electronics &amp; Personal Computers</td>
<td>183</td>
<td>3,294</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#606 – Major Appliances</td>
<td>122</td>
<td>2,196</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#607 – Music and Movies</td>
<td>61</td>
<td>1,098</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#608 – Computer Technical Support</td>
<td>220</td>
<td>3,960</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#6181X – Transfers to Site7 (by mobile agents)</td>
<td>4</td>
<td>89</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#6181C – Conferences to Site7 (by mobile agents)</td>
<td>4</td>
<td>89</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#6182X – Transfers to Site8 (by mobile agents)</td>
<td>8</td>
<td>225</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#6182C – Conferences to Site8 (by mobile agents)</td>
<td>8</td>
<td>225</td>
</tr>
</tbody>
</table>

North-Central Retail Center (Site7)

The following is a brief summary of Site7-relevant information:
- Has 691 agents who use CTI OS Desktop Application
- Handles Unified CVP Post-Routed calls
- Uses Unified CVP in Site1/Site5 for call treatment and queuing
- Uses its own Unified Communications Manager cluster for call conference/transfers
- Uses the Unified Communications Manager cluster in Site1/Site5 for call processing
- Operates as a call center

Table 23 lists the skill sets of the agents at the North-Central Retail Center (total BHCA: 12,518) and the agent to BHCA numbers.

Table 23  
Agent Profile for North-Central Retail Center (Site7)

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #2a</td>
<td>#705 – Electronics &amp; Personal Computers</td>
<td>197</td>
<td>3,546</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#706 – Major Appliances</td>
<td>141</td>
<td>2,538</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#707 – Music and Movies</td>
<td>127</td>
<td>2,286</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#708 – Computer Technical Support</td>
<td>196</td>
<td>3,528</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#7081X – Transfers from Site6</td>
<td>4</td>
<td>99</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#7082C – Conferences from Site6</td>
<td>4</td>
<td>99</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#7082X – Transfers from Site8</td>
<td>3</td>
<td>76</td>
</tr>
</tbody>
</table>
Note: Skill groups 7081 and 7082 are hosted locally on the small Unified Communications Manager cluster to support specific conference and transfers from Site6 and Site8.

South-Central Retail Center (Site8)

The following is a brief summary of Site8-relevant information:
• Has 637 agents who use CTI OS Desktop Application
• Handles Unified CVP Post-Routed calls
• Uses Unified CVP in Site1/Site5 for call treatment and queuing
• Uses the Unified Communications Manager cluster in Site1/Site5 for call processing
• Operates as a call center

Table 24 lists the skill sets of the agents at the South-Central Retail Center (total BHCA: 11,284) and the agent to BHCA numbers.

Table 24  
Agent Profile for South-Central Retail Center (Site8)

<table>
<thead>
<tr>
<th>Site</th>
<th>Skills and Services</th>
<th>Number of Agents</th>
<th>BHCA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Call Flow #2a</td>
<td>#805 – Electronics &amp; Personal Computers</td>
<td>207</td>
<td>3,726</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#806 – Major Appliances</td>
<td>115</td>
<td>2,070</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#807 – Music and Movies</td>
<td>110</td>
<td>1,980</td>
</tr>
<tr>
<td>Call Flow #2a</td>
<td>#808 – Computer Technical Support</td>
<td>167</td>
<td>3,006</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8081X – Transfers from Site6</td>
<td>8</td>
<td>99</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8081C – Conferences from Site6</td>
<td>8</td>
<td>99</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8082X – Transfers from Site7</td>
<td>7</td>
<td>89</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8082C – Conferences from Site7</td>
<td>8</td>
<td>89</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8181X – Transfers to Site7</td>
<td>3</td>
<td>54</td>
</tr>
<tr>
<td>Call Flow #2b</td>
<td>#8181C – Conferences to Site7</td>
<td>4</td>
<td>72</td>
</tr>
</tbody>
</table>
Sample Cisco Unified Customer Voice Portal Post-Routed Call Flows

The sample call flows created for this business case study reflect the typical retail customer business requirements. These sample call flows exercise specific features and functions of the contact center environment.

The three types of sample call flows discussed in this section are as follows:

- **Call Flow #1a: Distribution Center Calls (Inbound)**
  - Catalog Order Skill Group
  - Order Status Skill Group
  - Specialty Items Skill Group
- **Call Flow #2a: Retail Centers Calls (Inbound)**
- **Call Flow #2b: Retail Center Calls (Conference/Transfers)**
- **Call Flow #3: Retail Credit Account Collection Calls (Outbound)**

Call Handling Overview

Agents and the Unified Communications Manager clusters at the sites handling the call flows are set up as follows:

- **Unified Communications Manager Cluster #1:**
  - Unified Communications Manager cluster (CoW) at Site1/Site5
  - Agents are at Site6 (including mobile agents), Site7, and Site8
  Traffic between Site1/Site5 and Site6 (in Cluster 1) is considered intracluster or occurring within their home cluster.
- **Unified Communications Manager Cluster #2:**
  - Unified Communications Manager cluster (CoW) at Site3
  - Agents are at Site2 and Site3
- **Unified Communications Manager Cluster #3:**
  - Unified Communications Manager cluster at Site7
  - Agents are at Site7 and Site8 and handle conference/transfers to and from Site6, Site7, and Site8
  Traffic between sites at Cluster 1 and Cluster 2 is considered intercluster or crossing between clusters.

Typically, all call flows have inbound BHCA targeted for each specific site. As such, there should be adequate agents at each site to handle the inbound local BHCA sent to that site.

Furthermore, specific skill groups and sites are identified as targets for call overflow which occurs when agents are not available at the site that the call originally came in at (local site).

When a call arrives at the local site and agents are unavailable, the system checks for available agents in that skill group at other clustered sites. When selecting an overflow site, the agents that belong to the home cluster are preferred over agents in a different cluster.

For instance, using the agent and cluster set up described above, a call that comes into Site6 is first sent to agents at Site6. If agents are unavailable at Site6, then the call is only sent to available agents at Site7 or Site8.
If agents are not available at any of the above sites, the call is usually queued for an agent in that skill group at the local site (Site6 in the example). However, calls can be handled in a variety of ways depending on the call treatment logic and rules.

See Summary of Call Handling and Queueing to understand how calls are handled for the sample call flows described in this section.

All BHCA and Erlang Calculations are made with the following assumptions across all call flows:

- Average Talk Time for each call is 2 minutes (120 seconds)
- Each inbound call is greeted with a 10-second opening menu/greeting
- All inbound calls have a 30-second after call work time
- The Service Level Target for SS&S is that 80% of calls are answered within 20 seconds

At the distribution center, multiple voice gateways are loaded with the Cisco Unified Survivable Remote Site Telephony (Unified SRST) functionality to allow them to process calls, even if the connection to the data centers fails. In the event that the SRST mode kicks in, all calls are automatically re-routed to another site using a direct transfer to the main number of the target site.

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Note

Retail centers do not use the SRST functionality.

**Call Flow #1a: Distribution Center Calls (Inbound)**

SS&S provides customers with local and toll-free phone numbers to call into their regional distribution centers. The toll-free numbers are routed by the long distance carrier based upon the originating location of the caller and presented to the regional site on a local number mapped to that site.

Customers who call into these access numbers are presented with a menu of choices. Based on the selection they make, they are transferred to the local agents who provide that service for that region.

Agents and the Unified Communications Manager clusters at the sites handling the Unified CVP Post-Routed call flow are set up as follows:

- Unified Communications Manager Cluster #1: Agents at Site6, Site7, and Site8
- Unified Communications Manager Cluster #2: Agents at Site2 and Site3

Table 25 lists the distribution center and its local access number, estimated BHCA, and agents for inbound Unified CVP Post-Routed calls.

---

**Table 25 Distribution Center Local Lines**

<table>
<thead>
<tr>
<th>Site</th>
<th>Local Number</th>
<th>Est. BHCA / Site</th>
<th>Agents / Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Virtual Call Center (Site2)</td>
<td>785-232-7799</td>
<td>3,600</td>
<td>200 (mobile agents)</td>
</tr>
<tr>
<td>Distribution Center (Site3)</td>
<td>785-232-7777</td>
<td>5,400</td>
<td>300</td>
</tr>
</tbody>
</table>

---

Note

All BHCA numbers above are for inbound Unified CVP Post-Routed calls; outbound, conference and transfer call volume is not included.

**Call Flow Logic**

Depending on the destination, calls coming into the distribution center are presented with a welcome greeting and then with an opening menu (of 10 second duration):
“Thank you for calling Siren Supplies & Stores’ Distribution Center. Please select from the following services:

- Press 1 if you wish to place a new order from our catalog
- Press 2 if you want to check on the status of an order
- Press 3 for our Speciality Items Catalog
- Or stay on the line and someone will assist you shortly.”

If the caller presses:

- 1, the call is routed to any available agent at the local site who has the ‘x301 – Catalog Order Skill.’
- 2, the call is routed to any available agent at the local site who has the ‘x302 – Order Status Skill.’
- 3, the call is routed to any available agent at the local site who has the ‘x303 – Specialty Items Skill.’
- An invalid selection, the system terminates the call after playing the following message:
  “Sorry you are having difficulty. Please try again later. Goodbye.”.

If the user does not make a selection when prompted, after making multiple requests for a response, the system disconnects the user after playing a courtesy message.

**Call Handling and Queueing**

SS&S has installed the local line calling functionality to encourage local contact with the central distribution center. All calls coming into the local line at the distribution center (Site3) will be answered by an agent in that skill group at that site (based on the longest available or most idle agent).

If there are no agents available in each of the skill groups, the call is held in queue for the next available agent in that skill group at that site.

Unanswered calls remain in their respective queues, regardless of the length of time they are in queue. The number of calls in any of these queues is controlled by a variable in an admin script, which varies based upon conditions such as agent-to-call ratios, etc.

If there are more than 20 calls in any of these queues, the caller hears an announcement before being put on hold:

“We are experiencing heavier than normal call volumes. There are <<number of calls inserted from real time feed>> ahead of you in this queue. You may wish to call back later for faster service.”

The system does not terminate this call. Callers who wish to wait are allowed to continue to hold in queue once this message is played. It is up to the caller’s discretion to hang up and terminate the call.

**Call Flow #2a: Retail Centers Calls (Inbound)**

SS&S provides customers with local and toll-free phone numbers to call into their retail centers. The toll-free numbers are routed by the long distance carrier based upon the originating location of the caller and presented to the retail site on a local number mapped to that site.

Table 26 provides a list of the retail centers and their local access numbers, estimated BHCA, and agents per retail site for inbound Unified CVP Post-Routed calls.

<table>
<thead>
<tr>
<th>Site</th>
<th>Local Number</th>
<th>Est. BHCA / Site</th>
<th>Agents / Site</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Atlantic Retail Center (Site6)</td>
<td>707-222-7777</td>
<td>10,548</td>
<td>683</td>
</tr>
</tbody>
</table>


**Call Flow Logic**

Calls coming into the retail centers are presented with a welcome greeting and then with an opening menu (of 10 second duration) specific for that site:

“Thank you for calling Siren Supplies & Stores’ (Mid-Atlantic/North-Central/South-Central) Super Center. Please select from the following departments for assistance:

- Press 1 for Electronics and Personal Computers
- Press 2 for Major Appliances
- Press 3 for Music and Movies
- Press 4 for Technical Support for your Siren PC or Electronic Equipment
- Or stay on the line and someone will assist you shortly.”

If the caller presses:

- 1, the call is routed to any available agent at the local site who has the ‘x05 – Electronics Skill.’
- 2, the call is routed to any available agent at the local site who has the ‘x06 – Major Appliances Skill.’
- 3, the call is routed to any available agent at the local site who has the ‘x07 – Music and Movies Skill.’
- 4, the call is routed to any available agent at the local site who has the ‘x08 – Technical Support Skill.’
- An invalid selection, the system terminates the call after playing the following message:
  “Sorry you are having difficulty. Please try again later. Goodbye.”

If the user does not make a selection when prompted, after making multiple requests for a response, the system disconnects the user after playing a courtesy message.

**Call Handling and Queueing**

If there are no agents available in each of the skill groups, the call is held in queue for the next available agent in that skill group for that site.

Unanswered calls remain in their respective queues, regardless of the length of time they are in queue. The number of calls in any of these queues is controlled by a variable in an admin script, which varies based upon conditions such as agent-to-call ratios, etc.

If there are more than 20 calls in any of these queues, the caller hears an announcement before being put on hold:

“We are experiencing heavier than normal call volumes. There are << number of calls inserted from real time feed >> ahead of you in this queue. You may wish to call back later for faster service.”
The system does not terminate this call. Callers who wish to wait are allowed to continue to hold in queue once this message is played. It is up to the caller’s discretion to hang up and terminate the call.

**Call Flow #2b: Retail Center Calls (Conference/Transfers)**

The retail centers provide *frontline* agents who handle the majority of the inbound calls for SS&S. However, when a frontline agent is unable to answer a question or resolve a customer issue, they can conference in or transfer the call to a *backup* agent or subject matter expert. These backup agents are part of Technical Support Escalation groups located at all three retail centers (Site6, Site7, and Site8).

Each location has a dedicated internal phone number for the agents to call to access the escalation groups at the sites. Within each site, specific numbers have been set up for conferences and transfers to individually track these calls.

*Table 27* provides the internal numbers for the Technical Support Escalation groups at the retail centers.

<table>
<thead>
<tr>
<th>Site</th>
<th>Internal Numbers</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mid-Atlantic Retail Center (Site6)</td>
<td>707-222-8324 (Transfer)</td>
</tr>
<tr>
<td></td>
<td>707-222-8325 (Conference)</td>
</tr>
<tr>
<td>North-Central Retail Center (Site7)</td>
<td>773-222-8324 (Transfer)</td>
</tr>
<tr>
<td></td>
<td>773-222-8325 (Conference)</td>
</tr>
<tr>
<td>South-Central Retail Center (Site8)</td>
<td>972-222-8324 (Transfer)</td>
</tr>
<tr>
<td></td>
<td>972-222-8325 (Conference)</td>
</tr>
</tbody>
</table>

**Call Flow #3: Retail Credit Account Collection Calls (Outbound)**

The outbound Collections skill group performs follow-up calls to SS&S customers using the Collections campaign.

The group of 73 (including 15 mobile) blended agents make an estimated 1,314 BHCA outbound calls. This number refers to the number of successful calls, which is estimated at 30% of the total calls placed by the Unified OUTD as shown below:

- Calls Answered: 1,314 (30% of call volume)
- Calls Busy: 1,533 (35% of call volume)
- Calls Not Answered: 1,533 (35% of call volume)
- Total Calls Dialed: 4,380

**Call Handling and Queueing**

Outbound calls are handled by a predictive dialer where the system dials several calls at once. This is done since some of the calls do not complete due to bad numbers, busy lines, etc. When a customer answers the call, an agent is immediately connected to the customer to perform the collections request. If the customer asks the agent to call back later, the agent can set up the system in one of two ways:

- Use the personal callback feature, to call the customer back at a scheduled time.
- Use the system callback feature, to have the system call the customer back at a scheduled time and connect the customer with any available agent in the Collections group.
At the Mid-Atlantic Retail Center (Site6), calls are made in the Predictive Mode, using agents from the ‘604 – Retail Credit Account Collections’ group to make the outbound calls.

If the outbound Campaign detects an answering machine (or call answering service), the system plays the following message to the customer before terminating the call:

“We have an important message for you from Siren Supplies and Stores. Please call us at 1-866-747-3677 as soon as you can. Thank you.”

**Emergencies and Special Situations**

If a site has to be closed for an emergency, for instance, a bomb threat, a special site emergency skill group is defined with a specific agent associated with it. All the standard call flows check to make sure the emergency agent has not logged into the emergency skill group, before attempting to process the call for that site.

- If a site is closed in an emergency close situation, all calls ignore the local agents for that closed site and consider only agents from other sites, provided they are also not closed for the same reason. If all sites are in emergency close mode, the system acts as if the company is closed or outside of normal calling hours.

  Calls queued for a site that is in emergency close will be re-qualified to select another site for the queue.

- If a site is not closed and is scheduled to be open, but the agents are unable to log in for some reason (snow storm, black-out, etc.), the system does not accept calls into the queues for that site and treats the site as if it was closed.

- If a site is closed due to a national holiday, customers’ calls into the contact centers are treated similar to the outside of normal calling hours closure and a message informs the caller that the company is closed for the holiday.

**Summary of Call Handling and Queueing**

Based on routing scripts defined by the business logic, it can be seen that the contact center system handles and queues different types of calls in a variety of ways.

Table 28 summarizes this information and lists the different types of sample Unified CVP Post-Routed call flows discussed previously, the sites that are eligible to handle them, and their treatment by the contact center system.
### Table 28  Summary of Call Handling and Queueing for Unified CVP Sites

<table>
<thead>
<tr>
<th>Call Flow#</th>
<th>Call Type</th>
<th>Eligible Sites</th>
<th>Call Treatment by System</th>
</tr>
</thead>
</table>
| Call Flow #1a | Distribution Center Inbound Unified CVP calls | Local site only                             | • If agent is logged on and available, transfers directly to agent.  
• Once queued locally, not permitted to cross to other sites, even within the same cluster.  
• If more than 20 calls in queue, plays message to call back.  
• Caller must terminate call by hanging up. |
| Call Flow #2a | Retail Center Inbound Unified CVP calls | Local site only                             | • If agent is logged on and available, transfers directly to agent.  
• Once queued locally, not permitted to cross to other sites, even within the same cluster.  
• If more than 20 calls in queue, plays message to call back.  
• Caller must terminate call by hanging up. |
| Call Flow #2b | Retail Center Conferences/Transfers | All sites (wherever the agent is located)    | • If agent is logged on and available, transfers directly to agent.  
• If agent is logged on but taking another call, places in queue for that agent and plays message to wait or terminate call. |
| Call Flow #3 | Retail Credit Account Collections | Only Site6 handles outbound calls            | • Uses predictive Unified OUTD.  
• If called party answers, connects call to agent.  
• If called party does not answer, does not try the call again within campaign time.  
• If called party asks agent to call back, uses personal callback or system callback features to call customer back at scheduled time.  
• If answering machine is detected, system leaves message asking customer to call back and terminates call. |
| Special Calls | Shutdown due to Emergency, Bad Weather, or Holiday | All sites                                   | • If the site is closed, does not consider the site for calls.  
• If call is queued at closed site, reroutes to an open site.  
• If all sites are closed, does not accept calls into queues, and plays site closed message. |