

Allworx[®]

Queuing And Automated Call Distribution Guide

Version 7.6

Updated November 25, 2013



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Version 7.6



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Feature History

Rel.	Description
7.1	Initial release of ACD feature
7.2	New ACD features: <ul style="list-style-type: none"> • Busy Handset Option • Agent Temporary Logout • All Agents Busy Option • Display ACD Description when ACD Appearance is ringing
7.3	New ACD features: <ul style="list-style-type: none"> • Additional Queue Exit Options • Increased number of calls in all queues on 48x to 64
7.4	New ACD features: <ul style="list-style-type: none"> • Calls do not distribute to ACD agent handsets that have a non-ACD call on hold • Multiple Busy Reasons • Queue Priority Distribution • Allow agents to go BUSY while in Wrap-Up • Failure to answer a call does not log an agent out
7.5	New ACD features: <ul style="list-style-type: none"> • Agents log in to queues using their PIN rather than their password. All users have both a password and a PIN. The PIN is used for phone keypad logins. • To record queue greetings and status messages, log in to the Message Center rather than an Auto Attendant. • Delegated the responsibility for configuring queues to privileged system users. Users assigned either the Server Administrator role or the Phone Administrator role can configure queues by logging into the web admin page using assigned username and password. They can also record queue greetings and status messages by logging into their Message Center account
7.6	New ACD Features: <ul style="list-style-type: none"> • Allworx Server Administrator can manage agents from web admin page.

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1 Introduction

1.1 Who Should Use This Guide

This guide is for individuals that configure, manage, and use Allworx queuing.

1.2 Overview

Use Call Queues when incoming calls are too numerous to answer immediately or to distribute calls to a particular set of users. The incoming calls go into a queue and agents (users responsible for servicing calls from a queue) answer the calls in first-in-first-out (FIFO) order. The Allworx system offers two methods for call queuing:

- Ring All - rings the stations of all available agents.
- Automated Call Distribution (ACD) - directs calls to specific agents.

Note:	The Allworx 6x12 server supports only Ring All queuing.
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The Call Queue works only with Allworx IP phones, no other manufacturer's phones support the Allworx Call Queue features. Use Allworx IP phones to access all available queuing features.

The Call Queuing and Automatic Call Distribution features each require a feature key. The Call Queuing Feature Key activates Ring All queuing, and the Automatic Call Distribution Feature Key activates both Ring All and ACD queuing.

Available features:

- Call Queues provide feedback to callers:
 - Greeting message when calls enter the queue.
 - Periodic status messages while waiting in the Call Queue. The interval between status messages is configurable.
 - Ringing for customers to hear while waiting in the queue, as an alternative to the periodic status messages.
- Using an Allworx IP phone, agents can:

- Log in and out of queues.
- Receive calls from or answer calls in a queue.
- Configure the conditions under which agents receive calls.
- Monitor the status of the queues.
- Configure the maximum wait time for a call before hanging up or transferring to: an Auto Attendant, an extension, another queue, or a user's voicemail.
- Callers can exit the queue at any time by pressing zero (0). Different exit routes can be set up for each queue.
- Statistics for all queues are available from My Allworx Manager, as an export file and streamed to a PC on the network using a TCP streaming port number configured on the Allworx server.
- Number of queues and calls supported on the Allworx servers:
 - 6x and 6x12: Up to eight (8) calls in one queue and a total of 16 calls in all queues.
 - 48x: Up to 16 calls in one queue and a total of 64 calls in all queues.
 - 24x: Up to 16 calls in one queue and a total of 32 calls in all queues.

2 Ring All Queues

The “Ring-All” distribution option rings all phones logged into the queue simultaneously. If there are any callers pending in the queue, all available phones ring according to the configured behavior. Caller ID information during inbound ringing and statistics related to specific agents are not available for this mode of operation.

To enable a Ring All queue:

1. Configure the queue in the Web Admin (Distribution Mode set to Ring All) See “Configure a Queue” on page 3 for more information.
2. Assign Queue Appearance PFK to phones assigned/available to agents. See “Configure the Phone” on page 4 for more information.
3. Agents log in to queue with Queue Appearance PFK (by default, Queue Appearance PFKs are set to automatically log in when the phones start up). See “To log in to the queue:” on page 6 for more information.
4. Assign the optional Queue Alarm PFK to any Allworx phones. See “Monitoring Queues with PFK” on page 21 for more information.

2.1 Configure a Queue

To configure the queue:

1. Log in to the server admin page and navigate to **Phone System > Call Queues** page.
2. Locate the Call Queue and click the **Modify** link. The Call Queue dialog window displays the features available for Ring All queuing.

Call Queue

Description Queue 3

Distribution Mode Ring All

Replay Status Message 60 (30- 600 seconds; 0 = no message)

Maximum Wait 1800 (1 - 7200 seconds; 0 = last keyset)

When queue answers call Play queue prompts

Queue Depth Yellow Alarm Threshold 16 (1-16 callers; 0 = no alarm)

Queue Depth Red Alarm Threshold 16 (1-16 callers; 0 = no alarm)

Wait Time Yellow Alarm Threshold 600 (0-7200 seconds)

Wait Time Red Alarm Threshold 600 (0-7200 seconds)

Hold Music Selection Line-In

When caller leaves queue due to

Maximum wait time expired: Transfer to extension 200 - Default Auto Attendant

Queue is full: Transfer to extension 200 - Default Auto Attendant

Caller presses 0: Transfer to extension 200 - Default Auto Attendant

Update Start Over Cancel

3. Update the features.

Feature	Description
Description	Textual description of the queue (e.g., Sales, Tech Support). The system displays this description in other areas (e.g., Statistics, handset display screen, etc).
Distribution Mode	Select the Ring All option.
Replay Status Message	Enter a value (seconds) between successive status update messages. Entering zero (0) disables the status message.
Maximum Wait	Enter a value (minutes) callers can wait in a queue; after exceeding this period the queue bumps the call. Entering zero (0) enables the caller to wait without a limit.
When queue answers call	Select the option for the caller to hear while waiting in the queue: <ul style="list-style-type: none"> • Play queue prompts • Do no play prompts (caller hears ringback)
Queue Depth Alarm Threshold	Enter a value (number of calls in the queue) to trigger the Queue Alarm PFK for yellow and red alarm levels. Entering zero (0) does not trigger an alarm. See "Monitoring Queues with PFK" on page 21 for more information.
Wait Time Alarm Threshold	Enter a value (seconds) to trigger the Queue Alarm PFK for yellow and red alarm levels. See "Monitoring Queues with PFK" on page 21.
Hold Music Selection	Select the hold music source that callers hear while waiting in the queue: <ul style="list-style-type: none"> • Line-in • None • moh_supplied.snd (supported file) • *.snd (any imported files)
When caller leaves queue due to	<p>Calls can exit the queue under any of the following conditions:</p> <ul style="list-style-type: none"> • Maximum wait time expired • Queue is full • Caller presses 0 <p>Select one of the following routes for each of the exit conditions:</p> <ul style="list-style-type: none"> • Hang up • Transfer to extension <specify extension> • Transfer to voicemail for user <specify user> • Transfer to Call Queue <specify Call Queue>

4. Click the **Update** button to save the changes.

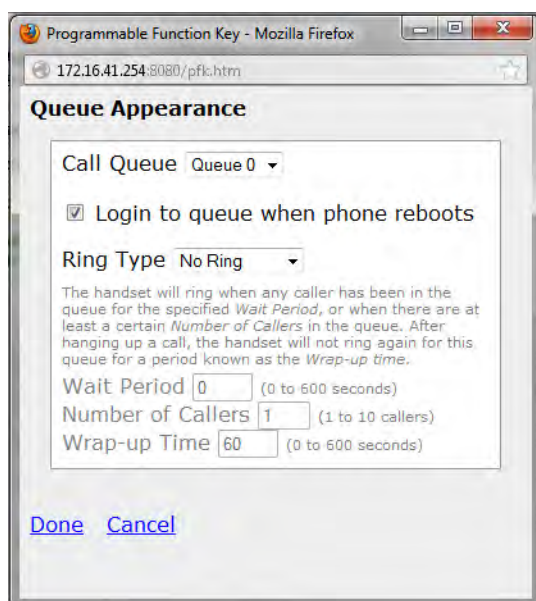
2.2 Configure the Phone

Configure an Allworx IP phone Programmable Function Key (PFK) as a Queue Appearance. This PFK can monitor the status of a queue and answer calls in the queue.

To configure the PFK:

1. Log in to the server admin page, and navigate to **Phone System > Handsets**.

2. Locate the SIP Handsets section of the page. In the Show: line, check the Allworx Handsets and Generic SIP Handsets check box filters.
3. Locate the handset to configure, and then click the **View Configuration** link.
4. Locate the Programmable Function Keys section and click the **Modify** link.
5. Locate the preferred PFK, click the drop-down arrow, and select Queue Appearance from the drop-down list.
6. Click the **define** link in the updated PFK. The Queue Appearance window displays.



7. Configure the settings for the Queue Appearance PFK:

Feature	Description
Call Queue	Select one of the available Call Queues from the drop-down list.
Login to queue when phone reboots	Enable or disable for automatic login after rebooting the phone.

Feature	Description
Ring Type	<p>Select a unique ring type to distinguish calls to this PFK from other calls to the phone.</p> <ul style="list-style-type: none"> • When set to No Ring, the Queue Appearance never rings. The agent uses the LED to monitor when there are calls in the queue. Press the PFK to service the next call in the queue. • Set to ring (Ring Type other than No Ring) enables the following fields, which control when the Queue Appearance rings: <ul style="list-style-type: none"> • Wait Period: Enter a value (seconds) a call must be in a queue before the Queue Appearance starts to ring. • Number of Callers: Enter a value (number of callers) that must be in a queue before the Queue Appearance starts to ring. • Wrap-up Time: Enter a value (seconds) the agent has available after ending a call before the system makes the agent available to receive subsequent ACD queue calls. Agents can dismiss/end the wrap up time from the handset. Reboot the agents phones to apply changes to wrap up time. • Meet the following conditions for a Queue Appearance to ring: <ul style="list-style-type: none"> • Log in to the station. • Queue Appearance is idle. • Reach the wait period of number of callers thresholds. • Agent is not in the Wrap-up Time.

8. Click **Done** to save the changes.

To log in to the queue:

Press the Queue Appearance PFK for five seconds, and then releasing it toggles between logged in and logged out. Agents can still service calls in the queue while logged out by pressing the PFK.

Table 1: Call Queue PFK LED behavior

Color	Description
Off	Logged In - handset is logged into queue
Solid Green	Active Call - handset is servicing queue call
Slow Blinking Green	Hold - queue call is on hold
Fast Blinking Green	Ringing - call in queue
Solid Red	Logged Out - handset is logged out of queue
Slow Blinking Red	Logged Out Ringing - handset is logged out and there is a call in the queue. Station does not ring. Agent is able to retrieve queue call by pressing the PFK.

3 Automated Call Distribution Queues

Automated Call Distribution Queues are queues that use any of the other available distribution features, and directs each call to a specific agent. See “ACD Call Distribution Features” on page 7 for more information.

Note:	The Allworx 6x12 does not support ACD queuing.
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Table 2: ACD Call Distribution Features

Feature	Description
Linear Priority	Distributes calls based on a prioritized list of agents. The queue supervisor sets the priority by assigning a unique ranking to each agent. As each call comes in, it goes to the available agent with the highest priority ranking.
Sequential Round-Robin	Distributes calls in a circular manner to the logged-in agents, and evenly distributes the calls so that the agents have the opportunity to answer approximately the same number of calls. The sequential round-robin feature maintains a list of available agents. When a call gets to the front of the queue, the next agent on the list receives it. After the last agent on the list receives a call, the distribution option returns to the top of the list. If the agent in line to receive the next call is currently busy with another call, the call goes to the next agent on the list. The busy agent that missed the call moves down on the list of agents to receive the next call when they are available. When agents log in, they are put at the bottom of the list.
Fairness-Longest Idle	Distributes calls to logged-in agents that are idle for the longest time. The objective is to evenly distribute the calls so that all agents spend approximately the same amount of time on calls. The fairness feature maintains a list of all available agents. When a call gets to the front of the queue, the next agent on the list receives it. The feature places agents at the top of the list after logging in. After completing a call, the agent moves to the bottom of the list.

To enable ACD queuing:

1. Configure queue in the Web Admin page. See “Configure a Queue” on page 8.
2. Assign a system user as queue supervisor (the admin user is a queue supervisor). See “Call Queue Supervisor” on page 11.
3. Queue supervisor assigns agents to single or multiple queues in My Allworx Manager. See “To assign agents to a queue:” on page 10.

4. Assign an ACD Appearance PFK to the Allworx IP phone used by agents (ACD queuing requires Allworx IP phones). See “Configure the Phone” on page 12.
5. Agents log in to queue with ACD Appearance PFK. See “Log in and Log out of ACD Queues” on page 13.

3.1 Configure a Queue

To configure the queue:

1. Log in to the server admin page and navigate to **Phone System > Call Queues** page.
2. Locate the Queue to configure and click the **Modify** link. Set the Distribution Mode to something other than Ring All. The available options increase.

Call Queue

NOTE
If fields marked with * are changed the agents must log out and back in to use the new values.

Description* Queue 0

Distribution Mode Linear Priority

Replay Status Message 60 (30 - 600 seconds, 0 = no status)

Maximum Wait 1800 (1 - 7200 seconds, 0 = wait forever)

When queue answers call Play queue prompts

Queue Depth Yellow Alarm Threshold 8 (1-8 callers, 0 = no alarm)

Queue Depth Red Alarm Threshold 8 (1-8 callers, 0 = no alarm)

Wait Time Yellow Alarm Threshold 600 (0-7200 seconds)

Wait Time Red Alarm Threshold 600 (0-7200 seconds)

Hold Music Selection Line-In

Maximum Rings (before agent is logged out) 4 (1 - 100 rings)

Wrap-up Time* 60 (0 - 3600 seconds)

When no agents are logged in* Force callers to leave queue immediately

When calls are received with all agents busy Allow callers to enter queue

Last Agent in queue Is allowed to logout of queue

Distribute calls to busy handsets Enabled

Play greeting before call distribution Disabled

Queue Priority 0

When caller leaves queue due to

- Maximum wait time expired:** Transfer to extension 400 - Default Auto Attendant
- No agents logged in/available:** Transfer to extension 400 - Default Auto Attendant
- Queue is full:** Transfer to extension 400 - Default Auto Attendant
- Caller presses 0:** Transfer to extension 400 - Default Auto Attendant

Agents [show](#)

Update Start Over Cancel

3. Update the features.

Feature	Description
Description	Textual description of the queue (e.g., Sales, Tech Support). The system displays this description in other areas (e.g., Statistics, handset display screen, etc).

Feature	Description
Distribution Mode	Select any option except the Ring All option. <ul style="list-style-type: none"> • Fairness - Longest Idle • Linear Priority • Sequential Round Robin
Replay Status Message	Enter a value (seconds) between successive status update messages. Entering zero (0) disables the status message.
Maximum Wait	Enter a value (minutes) callers can wait in a queue; after exceeding this period the queue bumps the call. Entering zero (0) enables the caller to wait without a limit.
When queue answers call	Select the option for the caller to hear while waiting in the queue: <ul style="list-style-type: none"> • Play queue prompts • Do no play prompts (caller hears ringback)
Queue Depth Alarm Threshold	Enter a value (number of calls in the queue) to trigger the Queue Alarm PFK for yellow and red alarm levels. Entering zero (0) does not trigger an alarm. See Monitoring Queues with PFK for more information.
Wait Time Alarm Threshold	Enter a values (seconds) to trigger the Queue Alarm PFK for yellow and red alarm levels. See Monitoring Queues with PFK for more information.
Hold Music Selection	Select the option for the caller to hear while waiting in the queue: <ul style="list-style-type: none"> • Line-In • None • <.snd supplied files>
Maximum Rings	Enter a value (number of rings) agents have to answer a call. If the agent does not answer the call before the maximum number of rings, the system sets the agent to unavailable (No Answer), and the call returns to the front of the queue. The call rings the next available agent. NOTE: the system does not log out agents for not answering calls from an ACD queue even while on another call.
Wrap Up Time	Enter a value (seconds) the agent has available after ending a call before the system makes the agent available to receive subsequent ACD queue calls. Agents can dismiss/end the wrap up time from the handset. Reboot the agents phones to apply changes to wrap up time.
When no agents are logged in*	Select the option for callers entering the queue: <ul style="list-style-type: none"> • Force callers to leave queue immediately • Allow callers to wait in queue
When calls are received with all agents busy	Select the option for callers when agents are unavailable: <ul style="list-style-type: none"> • Allow callers to enter queue • Don't answer, treat as if caller left queue
Last Agent in queue	Select the option for the last agent: <ul style="list-style-type: none"> • Is allowed to logout of queue • Is NOT allowed to logout of queue NOTE: If the last agent servicing a queue does not pick up a call within the maximum number of rings, they will be placed in the busy state with busy reason "No Answer". Also, Queue Supervisors can log any agent out, regardless of this setting.

Feature	Description
Distribute calls to busy handsets	Select to enable or disable distributing calls to agent handsets that are currently busy with non-ACD calls. A busy handset is an agent handset any active call.
Play greeting before call distribution	Select enabled for calls to wait for the greeting message to complete if an agent is available or disabled to distribute calls immediately upon entering the queue. In either case, the messages play until the agent picks up the call.
Queue Priority	<p>Select a priority number. A lower number indicates a higher priority. When an agent is logged into more than one queue, the next call comes from the highest priority queue where calls are waiting.</p> <p>For example, if the VIP Queue has priority 0 and the Support Queue has priority 3, the agent always gets calls from the VIP Queue first. The only time a call from the Support Queue goes to the agent is if the VIP Queue has no calls. Queues that have the same priority function the same way as previous releases.</p>
When caller leaves queue due to	<p>Calls can exit the queue under any of the following conditions:</p> <ul style="list-style-type: none"> • Maximum wait time expired • No agents logged in/available • Queue is full • Caller presses 0 <p>Select one of the following routes for each of the exit conditions:</p> <ul style="list-style-type: none"> • Hang up • Transfer to extension <specify extension> • Transfer to voicemail for user <specify user> • Transfer to Call Queue <specify Call Queue>
Agents	<p>Click show to view and set agents assignment to the call queue and the order of linear priority distribution mode.</p> <p>Click hide for no display.</p>

4. Click **Update** to save the changes.

To assign agents to a queue:

Note:	To assign agents to a Call Queue, the queue must be set to something other than Ring All.
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1. Log in to My Allworx Manager and click the Call Queues tab.
2. Locate the Call Queue, and click the **view administration** link.
3. Locate the Agents line, and click the **show** link. The list of available agents displays.
 - **Fairness - Longest Idle** or **Sequential Round Robin** - Check the box next to the username to include the user as an agent in the queue.

- **Linear Priority** - Use the fields to assign agent priority. Enter a number starting at one for the highest priority. The lower the number, the higher the priority. Do not duplicate values.

Enter # to specify agent order in queue. Leave blank to exclude the user as an agent in the queue.

3	Joe 48xUser00 (User00)
4	Joe 48xUser01 (User01)
2	Joe 48xUser02 (User02)
	Joe 48xUser03 (User03)
5	Randy Raeon (randy)
1	System Administrator (admin)

Update Cancel

4. Click the **Update** button to save the changes.

3.2 Queue Busy Reasons

While agents are unavailable, the agent can select one of five busy reasons to enter the busy state. The Allworx Server Administrator identifies each Queue Busy Reason and all ACD queues use the same busy reasons.

To modify the Queue Busy Reasons:

1. Log in to the server admin page, and navigate to **Phone System > Call Queues**.
2. Locate the Queue Busy Reasons section, and click the **modify** link.
3. Enter the Queue Busy Reason description in the available field.
4. Click the **Update** button to save the changes.

3.3 Call Queue Supervisor

Call queue supervisors are system users with the authority to manage ACD queues. Only users that are local to a server have supervisory permissions. Remote, Multi-Site users do not have supervisory permissions to Call Queues on another server.

Queue supervisors manage ACD queues from the Call Queues tab of My Allworx Manager. See Allworx Server User Guide for details about using My Allworx Manager. The queue supervisor can:

- Select agents for the ACD queues

- Set agent priority for linear priority distribution queues
- Modify queue settings:
 - Maximum rings before logging out an agent
 - Wrap-up time
 - Queue alarm threshold levels
 - Action to take when no agents are logged in
 - Enable or disable the last agent to logout
 - When calls are received with all agents busy
 - Distribute calls to busy handsets
 - Play greeting before call distribution
 - Queue priority
- View agent login and status (busy vs. idle)
- Log out agents from ACD queues
- View, export, and reset the queue statistics

Note:	System users assigned to either the Server Administrator role or the Phone Administrator role have permission to modify the queue settings that are available in the server admin interface. The ACD-related permissions do not include the agent and statistics-related options listed above.
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3.4 Configure the Phone

Agents log in to ACD queues using an ACD Appearance Programmable Function Key (PFK) configured on Allworx IP phones. Assign ACD Appearance PFKs to all phones used by ACD queue agents. Assign only one ACD Appearance per station, therefore a phone can service only one ACD call at a time. See the Allworx Server Administrator's Guide for more information on configuring PFKs.

Typically the ACD queues do not use the Queue Appearance PFK described in the Ring All section. However, ACD agent phones can use Queue Appearance PFKs to indicate calls in the queue. Use the PFK only to retrieve calls still in the queue, before distributing to the agents. When a call from an ACD queue rings an agent's ACD Appearance, the call is no longer in the queue, and the Queue Appearance PFK cannot retrieve it.

3.5 Log in and Log out of ACD Queues

An agent must log in to an ACD Queue to receive calls from the queue. Use the ACD Appearance PFK to log in and out of queue(s).

The ACD Appearance PFK LED is solid red when the agent logs out of all ACD queues.

1. Press and hold the PFK for five seconds. The login prompt displays. Release the button.
2. Enter agent's extension - if the phone has an assigned user, the user's extension displays. Use the phone's dial pad and soft key buttons to enter and edit the extension, as needed.

- ACD Login -		
Please Enter User Ext.		
102_		
CANCEL	CLEAR	OK

3. Select the ACD queue - skip this step if there is only one ACD queue assigned to the agent. Use the phone's select, scroll, and soft key buttons to select queue(s).

<input checked="" type="checkbox"/> Service Queue		
<input type="checkbox"/> Request Queue		
CANCEL	CHK ALL	OK

4. Enter the agent's PIN. Use the station's dial pad and soft key buttons to enter and edit the PIN.

The ACD Appearance PFK LED turns off when the logged in agent is ready to receive calls. The PFK is amber when the queue is idle and the logged in agent is

the only available agent.

- ACD Login -		
Enter PIN		
*** _		
CANCEL	CLEAR	OK

To log out of change queues:

1. Press and hold the PFK for five seconds. The ACD queue list displays.
2. Deselect/select the queue. To log out, deselect all queues.
3. Enter the agent's PIN.

The ACD Appearance PFK LED turns solid red when the agent logs out of all queues.

To check the queues an agent logs into (agent must log in to at least one queue):

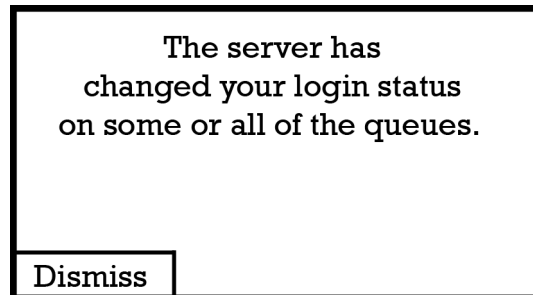
1. Press and hold the PFK for five seconds. The ACD queue list displays.
2. Press the Cancel soft key to dismiss the screen.

Agents can log in to any phone with an ACD Appearance PFK. Agents can only log onto one phone at a time. If an agents logs onto a second phone, then the system logs the agent off the first phone.

The system logs the agent out when:

- A Queue Supervisor logs the agent out
- The agent logs into a second phone

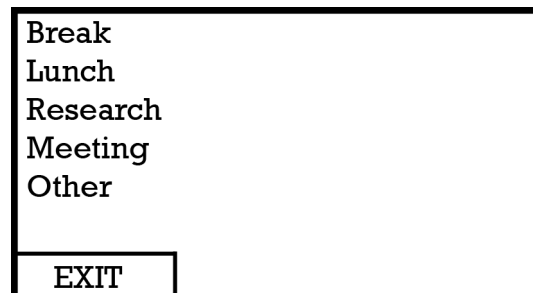
When the system logs agents out, this screen displays:



Additionally, the ACD Appearance PFK blinks red when the system logs the agent off.

If an agent fails to answer a call, the system places the agent into the “No Answer” busy state. The PFK blinks slow red, and the agent does not receive any additional calls. The agent must press and release the ACD Appearance PFK to clear the state and resume receiving calls.

A logged-in agent can manually enter the busy state by pressing and releasing the ACD Appearance PFK. The Busy State Reason list displays:



The agent highlights a busy reason using the arrow buttons and chooses it using the Select button . The agent presses and releases the PFK again to clear the busy state. Agent Servicing ACD Call.

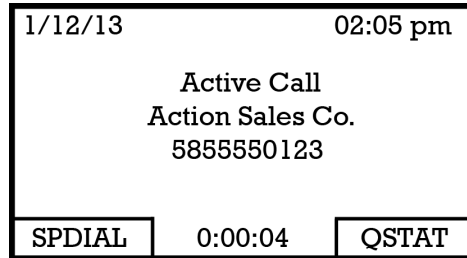
The ACD Appearance of the next available agent's phone receives the call in an ACD queue. When an agent services a call:

1. The call rings the ACD Appearance and the phone displays *Inbound Call* along with the caller ID. If the logged-in agent receives calls from more than one ACD queue, then the queue description also displays.

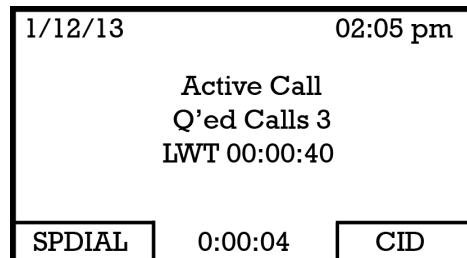
To stop the ringing, press *Silent* or *Ignore*. The phone LED no longer displays the inbound call information. If the agent does not answer the call within the

maximum number of rings, the system automatically logs out the agent.

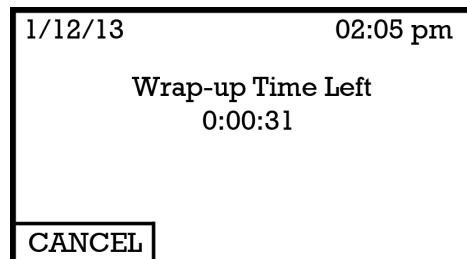
- The phone LED displays the active call after the agent answers the call.



- The agent can toggle between the active caller ID (CID) and the queue status information (QSTAT) using the phone soft key buttons. The queue status information replaces caller ID when a new call enters the queue.



- After the call ends and if the queue has wrap up time configured, the phone displays the wrap-up period information.



The agent can receive and place calls while in the wrap-up period. The agent ends the wrap up by pressing the CANCEL soft key button.

4 Manage Custom Queue Message Content

The system provides default greeting and periodic status messages to callers for all queues. Customize these messages by recording new messages directly into the system or by transferring audio files to the server.

A user with Recording Manager Permission or assigned System or Phone Administrator role can manage greetings and messages for Auto Attendants and Call Queues. Contact the Allworx Server Administrators for privileges.

4.1 Recording Messages

To record a new queue greeting and status message:

1. Dial the Message Center extension, 404¹ from the phone.
2. Log in using your PIN followed by the # sign.

If configuring the system for Dual Language Support, the system associates the new greetings and messages with the current language. To record greetings for an alternate language, switch languages before proceeding to the next step.

3. Dial 9 to manage recordings, and then dial 2 to manage Call Queue.
4. Enter the number of the Call Queue to manage (0 through 9).
5. Dial 1 for the greeting or 2 for the status message.

Dial	Greeting
1	Manage Call Queue Greeting
2	Manage Call Queue Status Message
#	Return to the Auto Attendant

-
1. Extensions may vary per system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions to use for the corresponding feature.

Dial	Greeting
*	Replay the options

6. Dial 2 to start recording. Begin speaking after the beep. When finished, dial #.

7. Select from the following options:

Dial	Greeting
1	Save the Greeting
2	Change the greeting
3	Review the greeting
#	Cancel the changes
*	Replay the options

8. Hang up to end the session.

4.2 Import Messages

To import messages recorded offline onto the Allworx server, the message files must be in a specific format: Telephony, raw, mu-law (u-law), mono, 8-bits per sample, 8KHz sample rate. See the Auto Attendant section of the Allworx Server Administrator's Guide for more information to convert files to this format.

The message file names must also be in a specific format:

cq#x.snd

where:

- # is the Call Queue number 0 through 9
- x is replaced with "g" for Greeting or "s" for Status Message

For example, the filename for the Status Message for Call Queue 3 is "cq3s.snd".

See the Auto Attendant section of the Allworx Server Administrator's Guide for more information to import the files.

5 Configure Calls Routing to a Queue

Calls enter a queue when routed to the queue by an extension. To configure, select a queue for the final call route of an extension (refer to this extension as the “queue extension”). Route the incoming calls to the queue extension:

- Route outside lines directly to the queue extension.
- Configure an Auto Attendant with a shortcut to the queue extension and route incoming calls to that Auto Attendant.

See the Call Routing section in the Allworx Server Administrator’s Guide for more information on setting up call routes.

To set up an auto Attendant menu shortcut:

1. Log in to the server admin page, and navigate to **Phone System > Auto Attendants**.
2. Locate the Auto Attendant for the shortcut, and click the **modify** link.
3. Locate the Menu Shortcuts section, and select a drop-down arrow in the Extension column.
4. Select the extension from the drop-down list.
5. Click the **Update** button to save the changes.

5.1 Using Auto Attendant to a Call Queue

Inbound calls come into an Auto Attendant. The Auto Attendant custom greeting includes, “For Customer Support, press 2.” After pressing 2, the caller hears the queue greeting, and the system places the call into the queue.

To configure the Call Routing to an Auto Attendant, and then to a Call Queue:

1. Define the call route of the outside line to direct calls to the Auto Attendant.
2. Create a Customer Support system extension. Define the call route to immediately transfer calls to the Customer Support queue.

3. Record an Auto Attendant custom greeting that instructs the callers to press 2 to reach Customer Support.
4. Configure the Auto Attendant menu shortcut for digit 2 to transfer calls to the Customer Support system extension.

5.2 Directly to a Call Queue

To place calls directly into the queue:

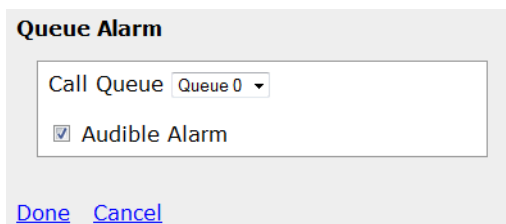
1. Create a Customer Support system extension. Define the call route to immediately transfer calls to the Customer Support queue.
2. Define the call route of the outside line to direct calls to the Customer Support system extension.

6 Monitoring Queues with PFK

With the Queue Alarm Programmable Function Key (PFK), any Allworx IP phone can display alerts of a given queue's activity levels. The Queue Alarm PFK monitors threshold values for longest wait time and/or number of calls in the queues. It signals green, yellow, and red alarm levels. Green is the lowest level, and red is the highest level. The Server Administrator or the queue supervisor define the thresholds.

To setup the PFK:

1. Log in to the server admin page, and navigate to the **Phone System > Handsets** page.
2. Locate the phone to configure, and click on the **View Configuration** link.
3. Click the **Modify** link in the Programmable Function Keys section.
4. Locate the preferred PFK, click the drop-down arrow, and select Queue Alarm for the PFK's function.
5. Click the **Define** link next to the PFK. the Queue Alarm dialog box displays.



Queue Alarm

Call Queue Queue 0 ▾

Audible Alarm

[Done](#) [Cancel](#)

6. Locate the Call Queue line, and click the drop-down arrow. Select the Queue to monitor.
7. Check or uncheck the Audible Alarm check box to enable or disable the audible alarm, respectively. Enable is the default.

Queue alarm threshold levels are set on the Queue configuration page. See "Configure

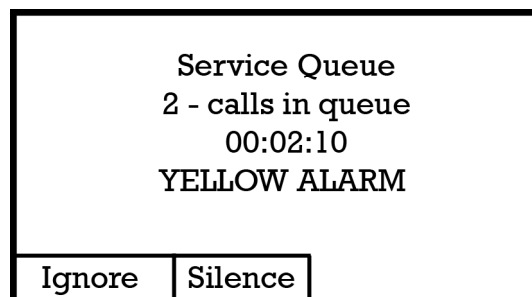
a Queue” on page 8 for more information.

Table 3: Queue Alarm PFK LED Display

Color	Description
Green	Both number of calls and wait times are less than the yellow threshold values.
Yellow	Either parameter has reached the yellow threshold value, but neither has reached the red threshold value. OR There are no logged-in agents in the queue, and the queue is set to force callers to leave the queue when no agents are logged in.
Red	Either parameter has reached the red threshold value. OR There are no logged-in agents in the queue, and a call enters the queue.

The Queue Alarm PFK has an optional audible alarm. The audible alarm triggers when threshold levels change from green to yellow or from yellow to red. The audible alarm includes a visual alarm on the phone LCD screen displaying the queue description, number of calls in the queue, longest wait, and the alarm level.

Ignore (dismiss) or Silence the audio/visual alarms with the phone soft key buttons.



7 Additional Information

7.1 Alternative Methods for Servicing Queue Calls

- Service the calls in a queue by dialing 441x¹, where the last digit is the queue number (0-9).
- Use Call Assistant to answer calls in the queues from the Call Queue tab.

7.2 Last Agent Logged Out Forces Caller to Leave Queue

If the only logged-in agent in a queue fails to answer an ACD call, the system logs out the agent. In addition, if the queue is set to force callers to leave queue immediately when there are no logged-in agents, this call exits from the queue and follows the defined exit routing.

7.3 Last Agent Cannot Log Out

When ACD queues are set so that the last agent cannot log out and the last agent must log out for any reason, a queue supervisor must log the agent out. The agent can also log out by allowing an ACD call to exceed the maximum rings.

7.4 Agents that Do Not Answer an ACD Call

If an agent fails to answer a call, the system places the agent in the “No Answer” busy state. The LED blinks slow red, and the agent does not receive any more calls. The agent must press and release the ACD Appearance PFK for 5 seconds to clear the state and resume receiving calls.

1. Extensions may vary by system. If you are using a non-default Internal Dial Plan, consult the Phone Features tab of the My Allworx Manager page to determine what extensions to use for the corresponding feature.



8 Queue Statistics

Allworx Queuing offers a rich variety of statistics to monitor, track, and analyze queue activity. The statistics are available in three ways:

- View via My Allworx Manager
- Export to XLS file from My Allworx Manager
- Stream to an external device connected to the LAN port of the server

8.1 Queue Statistics Report

All system users can view the call queue statistics. The statistics are available for queues determined by whether the queue is a Ring All queue or an ACD queue.

To see the statistics:

1. Log in to the My Allworx Manager page, and select the Call Queues tab.
2. Locate the call queue.

Table 4: Standard Queue Statistics (Ring All and ACD)

Statistic	Description
Calls Received	The number of calls placed into the queue.
Collection Period	The elapsed time for capturing statistics. This is the time since the last queue reset or last reboot of the Allworx server.
Average Time to Service	The total wait time of all calls waiting for service divided by the number of such calls.
Calls Serviced	The total number of calls requiring service.
Abandoned (short)	The number of calls in the queue when the caller hung up within 10 seconds.
Abandoned (long)	The number of calls in the queue when the caller hung up after 10 seconds.
Exit Key Pressed	The number of calls when the caller pressed an exit key to leave the queue.
Timed Out	The number of calls when the caller waited the maximum time before the system removed the call from the queue.
Total Wait Time	The total time for all calls in the queue before receiving service.
Longest Wait Time	The longest period of time any single call waited in the queue.

Table 4: Standard Queue Statistics (Ring All and ACD)

Statistic	Description
Maximum Calls in Queue	The highest number of calls waiting in the queue at one time.
Average Hold Time before abandoned	The total wait time of all Abandoned (long) calls divided by the number of such calls.

Table 5: ACD Queue Statistics

Statistic	Description
Call Volume	The average number of calls handled per hour during all periods with at least one logged-in agent.
Total Agent Time	The total amount of time the agents spend on active calls.
Total Call Time	The total Wait Time plus the total Agent Time.
Caller Efficiency	The total Agent Time divided by the total Wait Time.
Average Agent Time	The total Agent Time divided by the number of calls serviced.
Average Call Time	The total Call Time divided by the number of calls serviced.

Table 6: ACD Agent Queue Statistics

Statistic	Description
Serviced Calls	The number of calls serviced by the agent.
Missed Calls	The number of calls directed to the agent but not answered. The agent was logged out.
Total Service Time	The total time spent servicing calls excluding ringing time.
Average Service Time	The total Service Time divided by Serviced Calls
Average Answer Time	The average number of seconds to answer a call.
Longest Answer Time	The maximum number of seconds to answer a call.
Total Time logged into Queue	The total amount of time the logged-in agent was in the queue.

Table 6: ACD Agent Queue Statistics

Statistic	Description
Load Factor	The total Service Time plus wrap-up allowance divided by the total logged in time. The wrap-up allowance is the queue wrap-up time multiplied by the number of serviced calls for this queue.

For each ACD queue these statistics are available for each logged-in agent, and listed by Agent (user login name) and reset individually, for each agent. The queue supervisor can view these statistics using the **view agents** link.

The queue supervisor has the ability to reset the queue statistics.

To reset the statistics, click one of the available options:

- Reset All Queue Stats (will not reset agent statistics)
- Reset queue stats (will not reset agent statistics)
- Reset Stats per agent

8.2 Queue Statistics Export Report

Any system user can export all queue statistics to an XML-based spreadsheet file (supported by Excel 2003 or later).

1. Log in to the My Allworx Manager page, and click the Call Queues tab.
2. Click the **Export XLS Report** button.
3. Select a radio button option.
 - Click the **Open with** radio button to launch XML based spreadsheet program).
 - Click the **Save File** radio button to save the spreadsheet file to the PC (default file name is cqr.xls).

Table 7: Queue Statistics

Statistic	Description
ID	The queue number (0 through 9).
Name	The queue description.

Table 7: Queue Statistics

Statistic	Description
Average Time to Service	The total wait time of all calls waiting for service divided by the number of such calls.
Collection Period	The elapsed time for capturing statistics. This is the time since the last queue reset or last reboot of the Allworx server.
Collection Period	The elapsed time for capturing statistics. This is the time since the last queue reset or last reboot of the Allworx server.
Calls Serviced	The total number of calls requiring service.
Abandoned (short)	The number of calls in the queue when the caller hung up within 10 seconds.
Abandoned (long)	The number of calls in the queue when the caller hung up after 10 seconds.
Abandoned (total)	The total number of calls when the caller hung up.
Exit Key Pressed	The number of calls when the caller pressed an exit key to leave the queue.
Timed Out	The number of calls when the caller waited the maximum time before the system removed the call from the queue.
UTC Start Time	A timestamp (in seconds) of when the collection of statistics started.
UTC Report Time	A timestamp (in seconds) for creating the collection of statistics.
Total Wait Time	The total time for all calls in the queue before receiving service.
Longest Wait Time	The longest period of time any single call waited in the queue.
Maximum Calls in Queue	The highest number of calls waiting in the queue at one time.
Average Hold Time before abandoned	The total wait time of all Abandoned (long) calls divided by the number of such calls.
Total Agent Time	The total amount of active call time handled by the agents.
Total Time logged into Queue	The total amount of time the logged-in agent was in the queue.

Table 8: Agent Queue Statistics

Statistic	Description
ID	The queue number (0 through 9).
Name	The agent's username.
Serviced Calls	The number of calls serviced by the agent.
Missed Calls	The number of calls directed to the agent but not answered. The agent was logged out.

Table 8: Agent Queue Statistics

Statistic	Description
Total Service Time	The total time spent servicing calls excluding ringing time.
Longest Answer Time	The maximum number of seconds to answer a call.
Logged in Time	The total amount of time the logged-in agent was in the queue.
Total Time to Answer	The total time the agent took to answer all serviced calls.

8.3 Streaming Queue Statistics

Monitor the Call Queue statistics in real-time by streaming the data to a client application connected to a specified TCP port on the Allworx service's LAN interface. This feature provides a mechanism for the development of a third party wallboard application.

To enable streaming of queue statistics:

1. Log in to the server admin page and navigate to the **Phone System > Call Queues** page.
2. Locate the ACD Streaming Settings section, and click the **modify** link.
3. Set up the streaming queue data.
 - a. Set the ACD Streaming field to: Stream ACD information.
 - b. Set the ACD Streaming Port to the appropriate TCP port setting (1 through 65535; the default is 16367).
 - c. Click the **Update** button.
 - d. Reboot the Allworx server if changing the port setting.

Whenever there is any queue activity (e.g. callers enter, are serviced, exit queues, agent logs in or out, etc.) the data streams. Each record is a complete XML file. See the Allworx ACD Statistics Collection Internet Interface document for a complete definition of the record layout. To receive and view this data, use a telnet application (e.g., HyperTerminal) configured to log data from the TCP port configured on the server for ACD data streaming. The number of client connections limit is 16.

To display Live Calls:

1. Log in to the server admin page and navigate to the **Reports > Live Calls** page. A separate window opens.
2. Select one of the following options:
 - Check the Auto Refresh checkbox.
 - Click the **Refresh Now** button.
3. Click the "X" on the browser window or tab to close the admin web window (not the Live Calls window). Do not log out of the admin web page before closing.

If using the Refresh Now option, click the **Refresh Now** button at least once every 30 minutes.





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Version: 7.6 Revised: November 25, 2013