

# **Oracle8*i***

Application Developer's Guide - Advanced Queuing

Release 8.1.5

February 1999

Part No. A68005-01

**ORACLE®**

**HP\_1019\_0001**

---

Application Developer's Guide - Advanced Queuing, Release 8.1.5

Part No. A68005-01

Copyright © 199x, 1999, Oracle Corporation. All rights reserved.

Primary Author: Denis Raphaely

Contributors: Neerja Bhatt, Sashi Chandrasekaran, Dieter Gawlick, John Gibb, Mohan Kamath, Krishnan Meiyyappan, Bhagat Nainani, Goran Olsson, Madhu Reddy, Mary Rhodes, Ashok Saxena, Ekrem Soylemez, Alvin To, Rahim Yaseen

Graphic Designer: Valerie Moore

**The Programs are not intended for use in any nuclear, aviation, mass transit, medical, or other inherently dangerous applications. It shall be the licensee's responsibility to take all appropriate fail-safe, backup, redundancy and other measures to ensure the safe use of such applications if the Programs are used for such purposes, and Oracle disclaims liability for any damages caused by such use of the Programs.**

The Programs (which include both the software and documentation) contain proprietary information of Oracle Corporation; they are provided under a license agreement containing restrictions on use and disclosure and are also protected by copyright, patent, and other intellectual and industrial property laws. Reverse engineering, disassembly, or decompilation of the Programs is prohibited.

The information contained in this document is subject to change without notice. If you find any problems in the documentation, please report them to us in writing. Oracle Corporation does not warrant that this document is error free. Except as may be expressly permitted in your license agreement for these Programs, no part of these Programs may be reproduced or transmitted in any form or by any means, electronic or mechanical, for any purpose, without the express written permission of Oracle Corporation.

If the Programs are delivered to the U.S. Government or anyone licensing or using the Programs on behalf of the U.S. Government, the following notice is applicable:

**Restricted Rights Notice** Programs delivered subject to the DOD FAR Supplement are "commercial computer software" and use, duplication, and disclosure of the Programs including documentation, shall be subject to the licensing restrictions set forth in the applicable Oracle license agreement. Otherwise, Programs delivered subject to the Federal Acquisition Regulations are "restricted computer software" and use, duplication, and disclosure of the Programs shall be subject to the restrictions in FAR 52.227-19, Commercial Computer Software - Restricted Rights (June, 1987). Oracle Corporation, 500 Oracle Parkway, Redwood City, CA 94065.

Oracle, Pro\*Ada, Pro\*COBOL, Pro\*FORTRAN, SQL\*Loader, SQL\*Net and SQL\*Plus are registered trademarks of Oracle Corporation, Redwood City, California.

Designer/2000, Developer/2000, Net8, Oracle Call Interface, Oracle7, Oracle8, Oracle8i, Oracle Forms, Oracle Parallel Server, PL/SQL, Pro\*C, Pro\*C/C++ and Trusted Oracle are trademarks of Oracle Corporation, Redwood City, California.

All other products or company names are used for identification purposes only, and may be trademarks of their respective owners.

**HP\_1019\_0002**

---

---

# Contents

<b>Send Us Your Comments .....</b>	xvii
<b>Preface.....</b>	xix
Use Case Diagrams.....	xxiii
State Diagrams .....	xxix
<b>1   Introduction</b>	
<b>The Need for Queuing in Messaging Systems .....</b>	1-2
Message Systems .....	1-2
Message Persistence .....	1-3
<b>Features of Advanced Queuing (AQ) .....</b>	1-5
General Features.....	1-5
ENQUEUE Features .....	1-8
DEQUEUE Features .....	1-11
Propagation Features .....	1-13
<b>Primary Components of Advanced Queuing (AQ).....</b>	1-15
Message.....	1-15
Queue .....	1-15
Queue Table.....	1-15
Agent .....	1-15
Recipient .....	1-16
Recipient and Subscription Lists .....	1-16
Rule .....	1-17
Rule Based Subscriber.....	1-17

Queue Monitor .....	1-17
<b>Modeling Queue Entities .....</b>	<b>1-18</b>
Basic Queuing.....	1-19
Illustrating Basic Queuing .....	1-19
Illustrating Client-Server Communication Using AQ.....	1-21
Multiple-Consumer Dequeueing of the Same Message.....	1-23
Illustrating Multiple-Consumer Dequeueing of the Same Message .....	1-24
Illustrating Dequeueing of Specified Messages by Specified Recipients .....	1-26
Illustrating the Implementation of Workflows using AQ .....	1-28
Illustrating the Implementation of Publish/Subscribe using AQ .....	1-29
Message Propagation .....	1-32
Illustration of Message Propagation .....	1-34
<b>Programmatic Environments for Working with AQ .....</b>	<b>1-35</b>
<b>AQ and XA .....</b>	<b>1-35</b>
<b>Compatibility.....</b>	<b>1-36</b>
<b>Restrictions.....</b>	<b>1-37</b>
Auto-commit features in DBMS_AQADM package.....	1-37
Collection Types in Message Payloads.....	1-37
Object Type Payload Support in AQ Java API.....	1-37
Synonyms on Queue Tables and Queue .....	1-37
Pluggable Tablespace does not Work For 8.0 Compatible Multiconsumer Queues.....	1-37
Tablespace point-in-time recovery.....	1-38
Propagation from Object Queues .....	1-38
Non-Persistent Queues .....	1-38
<b>Reference to Demos .....</b>	<b>1-39</b>

## 2 Implementing AQ — A Sample Application

<b>A Sample Application.....</b>	<b>2-3</b>
<b>General Features.....</b>	<b>2-4</b>
System Level Access Control .....	2-5
Structured Payload .....	2-7
Queue Level Access Control .....	2-9
Non-Persistent Queues .....	2-10
Retention and Message History.....	2-20
Publish/Subscribe Support .....	2-21

Support for Oracle Parallel Server (OPS) .....	2-24
Support for Statistics Views .....	2-27
<b>ENQUEUE Features.....</b>	<b>2-28</b>
Subscriptions and Recipient Lists .....	2-29
Priority and Ordering of Messages.....	2-31
Time Specification: Delay .....	2-34
Time Specification: Expiration.....	2-35
Message Grouping.....	2-37
Asynchronous Notifications .....	2-39
<b>DEQUEUE Features.....</b>	<b>2-46</b>
Dequeue Methods.....	2-47
Multiple Recipients .....	2-50
Local and Remote Recipients.....	2-52
Message Navigation in Dequeue.....	2-54
Modes of Dequeuing .....	2-57
Optimization of Waiting for Arrival of Messages .....	2-61
Retry with Delay Interval .....	2-63
Exception Handling.....	2-65
Rule-based Subscription.....	2-69
Listen Capability.....	2-72
<b>Propagation Features.....</b>	<b>2-76</b>
Propagation .....	2-77
Propagation Scheduling .....	2-78
Propagation of Messages with LOB Attributes.....	2-82
Enhanced Propagation Scheduling Capabilities.....	2-85
Exception Handling During Propagation .....	2-87

### 3 Managing Oracle AQ

<b>INIT.ORA Parameter.....</b>	<b>3-2</b>
AQ_TM_PROCESSES .....	3-2
JOB_QUEUE_PROCESSES.....	3-3
<b>Common Data Structures .....</b>	<b>3-4</b>
Object Name .....	3-4
Type name .....	3-4
Agent .....	3-5

# Explore Litigation Insights



Docket Alarm provides insights to develop a more informed litigation strategy and the peace of mind of knowing you're on top of things.

## Real-Time Litigation Alerts



Keep your litigation team up-to-date with **real-time alerts** and advanced team management tools built for the enterprise, all while greatly reducing PACER spend.

Our comprehensive service means we can handle Federal, State, and Administrative courts across the country.

## Advanced Docket Research



With over 230 million records, Docket Alarm's cloud-native docket research platform finds what other services can't. Coverage includes Federal, State, plus PTAB, TTAB, ITC and NLRB decisions, all in one place.

Identify arguments that have been successful in the past with full text, pinpoint searching. Link to case law cited within any court document via Fastcase.

## Analytics At Your Fingertips



Learn what happened the last time a particular judge, opposing counsel or company faced cases similar to yours.

Advanced out-of-the-box PTAB and TTAB analytics are always at your fingertips.

### API

Docket Alarm offers a powerful API (application programming interface) to developers that want to integrate case filings into their apps.

### LAW FIRMS

Build custom dashboards for your attorneys and clients with live data direct from the court.

Automate many repetitive legal tasks like conflict checks, document management, and marketing.

### FINANCIAL INSTITUTIONS

Litigation and bankruptcy checks for companies and debtors.

### E-DISCOVERY AND LEGAL VENDORS

Sync your system to PACER to automate legal marketing.