PowerServer Configuration Guide for J2EE

Appeon® PowerServer® 2017 (on J2EE) FOR WINDOWS & UNIX & LINUX

### DOCUMENT ID: ADC20239-01-0700-01

### LAST REVISED: October 27, 2017

Copyright © 2000-2017 by Appeon Limited. All rights reserved.

This publication pertains to Appeon software and to any subsequent release until otherwise indicated in new editions or technical notes. Information in this document is subject to change without notice. The software described herein is furnished under a license agreement, and it may be used or copied only in accordance with the terms of that agreement.

No part of this publication may be reproduced, transmitted, or translated in any form or by any means, electronic, mechanical, manual, optical, or otherwise, without the prior written permission of Appeon Limited.

Appeon, the Appeon logo, Appeon PowerBuilder, Appeon PowerServer, PowerServer, PowerServer Toolkit, AEM, and PowerServer Web Component are trademarks of Appeon Limited.

SAP, Sybase, Adaptive Server Anywhere, SQL Anywhere, Adaptive Server Enterprise, iAnywhere, Sybase Central, and Sybase jConnect for JDBC are trademarks or registered trademarks of SAP and SAP affiliate company.

Java and JDBC are trademarks or registered trademarks of Sun Microsystems, Inc.

All other company and product names used herein may be trademarks or registered trademarks of their respective companies.

Use, duplication, or disclosure by the government is subject to the restrictions set forth in subparagraph (c)(1)(ii) of DFARS 52.227-7013 for the DOD and as set forth in FAR 52.227-19(a)-(d) for civilian agencies.

Appeon Limited, 1/F, Shell Industrial Building, 12 Lee Chung Street, Chai Wan District, Hong Kong.

# Contents

1.1 Audience       1         1.2 How to use this book       1         1.3 Related documents       1         1.4 If you need help       3         2 Server Configuration Tasks       4         2.1 Scope of configurations discussed in this book       4         2.2 Configuration during application deployment       5         2.2.1 Configuration during security management       6         2.2.2 Configuration during server information management       6         2.2.4 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       13         3.2.2 Configuring appeonserver.bat       13         3.2.2 Configuring appeonserver.bat       14         3.3.3 Uhat is backed up?       18         3.4.1 Starting Status Monitor       18         3.3.1 What is backed up?       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the informat	1 About This Book	. 1
1.2 How to use this book       1         1.3 Related documents       1         1.4 If you need help       3         2 Server Configuration Tasks       4         2.1 Scope of configurations discussed in this book       4         2.2 Configuration during application deployment       5         2.2.1 Configuration during debugging       6         2.2.2 Configuration during performance management       6         2.2.3 Configuration during performance management       7         2.2.6 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring appeonserver.sh (Unix\Linux)       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18	1.1 Audience	. 1
1.3 Related documents       1         1.4 If you need help       3         2 Server Configuration Tasks       4         2.1 Scope of configurations discussed in this book       4         2.2 Configuration during application deployment       5         2.2.2 Configuration during debugging       6         2.2.3 Configuration during becurity management       6         2.2.4 Configuration during server information management       7         2.5 Configuration during server information management       7         2.2.6 Configuration during performance management       9         3.1 Overview       9         3.2 Configuring status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2 Configuring appeonserver.sh (UnixLinux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18	1.2 How to use this book	. 1
1.4 If you need help       3         2 Server Configuration Tasks       4         2.1 Scope of configurations discussed in this book       4         2.2 Configuration stages and tasks       4         2.2.1 Configuration during application deployment       5         2.2.2 Configuration during security management       6         2.2.3 Configuration during security management       6         2.2.4 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring status Monitor       9         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.st       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       14         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.1 Starting Status Monitor       18      <	1.3 Related documents	. 1
2 Server Configuration Tasks       4         2.1 Scope of configurations discussed in this book       4         2.2 Configuration stages and tasks       4         2.2.1 Configuration during application deployment       5         2.2.2 Configuration during security management       6         2.2.3 Configuration during performance management       6         2.2.4 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the infor	1.4 If you need help	. 3
2.1 Scope of configurations discussed in this book       4         2.2 Configuration stages and tasks       4         2.2.1 Configuration during application deployment       5         2.2.2 Configuration during becurity management       6         2.2.3 Configuration during security management       6         2.2.4 Configuration during server information management       7         2.2.6 Configuration of emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.bat       12         3.2.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.4.1 Statung Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 What is PowerServer data source?       20         4.2.2 Why JDBC driver preparation       21         4.2.4 JDBC driver preparation       2	2 Server Configuration Tasks	. 4
2.2 Configuration stages and tasks       4         2.2.1 Configuration during application deployment       5         2.2.2 Configuration during debugging       6         2.2.3 Configuration during security management       6         2.2.4 Configuration during server information management       7         2.2.5 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring appeonserver.bat       9         3.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.bat       12         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up?       18         3.4.1 Starting Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information       18	2.1 Scope of configurations discussed in this book	. 4
2.2.1 Configuration during application deployment       5         2.2.2 Configuration during becurity management       6         2.2.3 Configuration during performance management       6         2.2.4 Configuration during performance management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor in PowerServer cluster       17         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 What is PowerServer data source?       20         4.2 What is PowerServer data source?       20         4.2.4 Why PowerServer data source?       20         4.2.4 Why PowerServer data source? <td>2.2 Configuration stages and tasks</td> <td>. 4</td>	2.2 Configuration stages and tasks	. 4
2.2.2 Configuration during debugging       6         2.2.3 Configuration during security management       6         2.2.4 Configuration during performance management       6         2.2.5 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring status Monitor       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2.2 What is PowerServer data source?       20         4.2.2 Why DBC driver only?       20         4.2.3 Supported JDBC driver type	2.2.1 Configuration during application deployment	. 5
2.2.3 Configuration during security management       6         2.2.4 Configuration during performance management       6         2.2.5 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       13         3.2.3 Configuring monitor.props       13         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2 Why DBC driver only?       20         4.2 Why JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver type       21         4.2.4.2 Copying drivers to PowerServer	2.2.2 Configuration during debugging	6
2.2.4 Configuration during performance management       6         2.2.5 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21	2.2.3 Configuration during security management	. 6
2.2.5 Configuration during server information management       7         2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2 Configuring monitor.props       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up Oata source for WebLogic 8.1       25         4.3.1.1 Setting up data s	2.2.4 Configuration during performance management	6
2.2.6 Configuration for emergency control       7         3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 What is PowerServer data source?       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.4 JDBC driver preparation       21         4.2.4 JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer <td>2.2.5 Configuration during server information management</td> <td>. 7</td>	2.2.5 Configuration during server information management	. 7
3 PowerServer Status Monitor       9         3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       12         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up data source for WebLogic 8.1       25         4.3.1.1 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for	2.2.6 Configuration for emergency control	. 7
3.1 Overview       9         3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.bat (Uinx\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver preparation       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source	3 PowerServer Status Monitor	. 9
3.2 Configuring Status Monitor       9         3.2.1 Configuring appeonserver.bat       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring mappeonserver.bat (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for Web	3.1 Overview	. 9
3.2.1 Configuring appeonmonitor.bat       9         3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2 Why PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver preparation       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up Adat source for WebLogic       25         4.3.1.1 Setting up data source for WebLogic 8.1       25         4.3.	3.2 Configuring Status Monitor	. 9
3.2.2 Configuring appeonserver.bat       12         3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1.1 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for WebSphere       39	3.2.1 Configuring appeonmonitor.bat	. 9
3.2.2.1 Configuring appeonserver.bat (Windows)       12         3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer cluster       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data source for WebLogic       25         4.3.1.1 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebLogic 11g       33	3.2.2 Configuring appeonserver.bat	12
3.2.2.2 Configuring appeonserver.sh (Unix\Linux)       13         3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1.1 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebSphere       39         4.3.2.1 Setting up dat	3.2.2.1 Configuring appeonserver.bat (Windows)	12
3.2.3 Configuring monitor.props       13         3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1 Setting up data source for WebLogic       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebSphere       39         4.3.2.1 Setting up data source for WebSphere       39	3.2.2.2 Configuring appeonserver.sh (Unix\Linux)	13
3.2.4 Additional configuration for Status Monitor in PowerServer       17         3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1 Setting up data source for WebLogic 8.1       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebSphere       39         4.3.2.1 Setting up data source for WebSphere       39	3.2.3 Configuring monitor.props	13
cluster173.3 Information backed up by Status Monitor183.3.1 What is backed up?183.4 Using Status Monitor183.4.1 Starting Status Monitor183.4.2 Understanding the information in Status Monitor Window184 Database Connection Setup204.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 8.1254.3.2.1 Setting up data source for WebLogic 11g334.3.2.1 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	3.2.4 Additional configuration for Status Monitor in PowerServer	
3.3 Information backed up by Status Monitor       18         3.3.1 What is backed up?       18         3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1 Setting up data source for WebLogic       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebLogic 11g       33         4.3.2.1 Setting up data source for WebLogic 11g       39         4.3.2.1 Setting up data source for WebSphere       39	cluster	17
3.3.1 What is backed up?183.4 Using Status Monitor183.4.1 Starting Status Monitor183.4.2 Understanding the information in Status Monitor Window184 Database Connection Setup204.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	3.3 Information backed up by Status Monitor	18
3.4 Using Status Monitor       18         3.4.1 Starting Status Monitor       18         3.4.2 Understanding the information in Status Monitor Window       18         4 Database Connection Setup       20         4.1 Overview       20         4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1 Setting up data source for WebLogic       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for WebSphere       39         4.3.2.1 Setting up data source for WebSphere 6.1       39	3.3.1 What is backed up?	18
3.4.1 Starting Status Monitor183.4.2 Understanding the information in Status Monitor Window184 Database Connection Setup204.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	3.4 Using Status Monitor	18
3.4.2 Understanding the information in Status Monitor Window184 Database Connection Setup204.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere39	3.4.1 Starting Status Monitor	18
4 Database Connection Setup204.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	3.4.2 Understanding the information in Status Monitor Window	18
4.1 Overview204.2 What is PowerServer data source?204.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4 Database Connection Setup	20
4.2 What is PowerServer data source?       20         4.2.1 Why PowerServer data source?       20         4.2.2 Why JDBC driver only?       20         4.2.3 Supported JDBC driver type       21         4.2.4 JDBC driver preparation       21         4.2.4.1 Checklist for JDBC driver preparation       21         4.2.4.2 Copying drivers to PowerServer       24         4.3 Setting up PowerServer data sources       25         4.3.1 Setting up data source for WebLogic       25         4.3.1.2 Setting up data source for WebLogic 11g       33         4.3.2 Setting up data source for WebSphere       39         4.3.2.1 Setting up data source for WebSphere 6.1       39	4.1 Overview	20
4.2.1 Why PowerServer data source?204.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2 What is PowerServer data source?	20
4.2.2 Why JDBC driver only?204.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.1 Why PowerServer data source?	20
4.2.3 Supported JDBC driver type214.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.1 Setting up data source for WebLogic 8.1254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.2 Why JDBC driver only?	20
4.2.4 JDBC driver preparation214.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.1 Setting up data source for WebLogic 8.1254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.3 Supported JDBC driver type	21
4.2.4.1 Checklist for JDBC driver preparation214.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.1 Setting up data source for WebLogic 8.1254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.4 JDBC driver preparation	21
4.2.4.2 Copying drivers to PowerServer244.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.1 Setting up data source for WebLogic 8.1254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.4.1 Checklist for JDBC driver preparation	21
4.3 Setting up PowerServer data sources254.3.1 Setting up data source for WebLogic254.3.1.1 Setting up data source for WebLogic 8.1254.3.1.2 Setting up data source for WebLogic 11g334.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.2.4.2 Copying drivers to PowerServer	24
<ul> <li>4.3.1 Setting up data source for WebLogic</li></ul>	4.3 Setting up PowerServer data sources	25
<ul> <li>4.3.1.1 Setting up data source for WebLogic 8.1</li></ul>	4.3.1 Setting up data source for WebLogic	25
<ul> <li>4.3.1.2 Setting up data source for WebLogic 11g</li></ul>	4.3.1.1 Setting up data source for WebLogic 8.1	25
4.3.2 Setting up data source for WebSphere394.3.2.1 Setting up data source for WebSphere 6.139	4.3.1.2 Setting up data source for WebLogic 11g	33
4.3.2.1 Setting up data source for WebSphere 6.1	4.3.2 Setting up data source for WebSphere	39
	4.3.2.1 Setting up data source for WebSphere 6.1	39
4.3.2.2 Setting up data source for WebSphere 8.0	4.3.2.2 Setting up data source for WebSphere 8.0	43
4.3.2.3 Required configurations when global security is on	4.3.2.3 Required configurations when global security is on	53

4.3.3 Setting up data source for JBoss	54
4.3.3.1 Setting up data source for WildFly and JBoss EAP	54
4.3.4 Setting up data source for NetWeaver	66
4.3.5 Setting up data source for JEUS	69
4.3.6 Data source parameters	73
4.3.6.1 Data source parameters for SAP SQL Anywhere	74
4.3.6.2 Data source parameters for ASE	75
4.3.6.3 Data source parameters for SAP IQ	75
4.3.6.4 Data source parameters for SAP HANA	76
4.3.6.5 Data source parameters for Microsoft SQL Server	76
4.3.6.6 Data source parameters for Oracle	77
4.3.6.7 Data source parameters for IBM DB2	77
4.3.6.8 Data source parameters for Informix	78
4.3.6.9 Data source parameters for MySQL	78
4.3.6.10 Data source parameters for Teradata	79
4.3.6.11 Data source parameters for PostgreSQL	80
4.4 Setting up transaction object to data source mapping	80
4.4.1 Dynamic transaction object to data source mapping	81
4.4.2 Static transaction object to data source mapping	82
4.5 Advanced configurations related with database connection	82
4.5.1 Application Security	82
4.5.1.1 Database security	82
4.5.1.2 Using INI files for connection security	83
4.5.2 Appeon security	84
4.5.2.1 Incorporate Appeon security in PowerBuilder code	84
4.5.2.2 Database auditing	85
5 AEM User Guide	86
5.1 Introduction	86
	86
5.1.2 AEM TOOIS	86
5.1.3 Supported web browsers	87
5.2 Getting started	87
5.2.1 Running PowerServer	8/ 07
	01
5.2.2.1 AEW URL	01 07
5.2.2.2 Three ways to faulterin AEM	01
5.2.2.3 AEM USEL Halle and password	00
	00
	00
5.2.5 AEM Help	09
	90 00
	90 00
5.3.1 1 Active Sessions	03 90
5.3.1.1 Active Sessions	30
5.3.1.2 Active Transactions	02
5.3.1.1 Active Sessions 5.3.1.2 Active Transactions 5.3.1.3 Deployment Sessions 5.3.2 Logging	93 ₀⊿
5.3.1.1 Active Sessions 5.3.1.2 Active Transactions 5.3.1.3 Deployment Sessions 5.3.2 Logging	93 94 ₀₄
5.3.1 Sessions 5.3.1.1 Active Sessions 5.3.1.2 Active Transactions 5.3.1.3 Deployment Sessions 5.3.2 Logging 5.3.2.1 Viewing logs 5.3.2.2 Log mode	93 94 94

	5.3.2.3 Replace log files	. 96
	5.3.3 Resources	. 97
	5.3.3.1 Cluster	. 97
	5.3.3.2 Maintenance	102
	5.3.4 Product Activation	103
	5.3.4.1 Licensing	104
	5.3.4.2 Support	117
	5.3.5 Server Security	118
	5.3.5.1 AFM login	119
	5352 User Management	120
	5353 Group Management	124
	5.3.5.4 User and Group Management at LDAP server side	129
	5355 System Security	129
	5 3 5 6 Deployment Security	132
54	Application	132
J. <del>T</del>	5 / 1 Configuration Summary	133
	5.4.2 Transactions	133
	5.4.2 1 Transaction Objects	125
	5.4.2.2 Timoout	127
	5.4.2.2 Timeout	107
	5.4.5 LOCAL DATADASE	139
	5.4.4 PD Fediules	140
		140
		141
	5.4.4.4 Decimal Dracician	144
	5.4.4.4 Decimal Precision	140
	5.4.4.5 Web Service Datawindow	147
		148
	5.4.5.1 IE Compatibility	148
	5.4.5.2 IE Browser Interface	150
	5.4.6 Client Features	150
	5.4.6.1 Application Litle	151
	5.4.6.2 Web Application Theme	151
	5.4.6.3 Web Application Auto Update	151
	5.4.6.4 Run Mode	152
	5.4.6.5 Error Message Mode	153
	5.4.6.6 Start & Exit	154
	5.4.6.7 Client Storage Location	155
	5.4.6.8 Client Logs	156
	5.4.6.9 Retina Display	158
	5.4.7 Data Transfer	158
	5.4.7.1 Charset	159
	5.4.7.2 Encoding	164
	5.4.8 Performance	165
	5.4.8.1 Multi-Thread Download	165
	5.4.8.2 Application Server Cache	166
	5.4.8.3 DataWindow Data Cache	168
	5.4.9 Client Security	172
	5.4.9.1 User Authentication	172

5.4.9.2 Appeon Workspace	175
5.4.10 Mobile App Distribution	176
5.4.10.1 Requirements	176
5.4.10.2 Upload standalone mobile apps and Appeon	
Workspace	178
5.4.10.3 QR code generation for mobile application(s)	181
5.5 Mobile UI Resizing	182
5.5.1 Screen Size	182
5.5.1.1 Adding a device	183
5.5.1.2 Editing a device	184
5.5.1.3 Deleting a device	184
5.5.2 Window Size	184
5.5.2.1 Configuring size for all windows	185
5.5.2.2 Configuring size for an individual window	187
Index	190

# **1 About This Book**

# 1.1 Audience

This book is intended for users and system administrators that are responsible for the configuration of servers used in the Appeon PowerServer architecture.

# **1.2 How to use this book**

There are five chapters in this book.

Chapter 1: About This Book

A general description of this book

Chapter 2: Server Configuration Tasks

Describes configuration stages and tasks related to PowerServer.

Chapter 3: PowerServer Status Monitor

Describes how to configure and use PowerServer Status Monitor.

Chapter 4: Database Connection Setup

Describes how to set up connection between PowerServer and Database Server.

Chapter 5: AEM User Guide

Describes how to configure AEM.

# 1.3 Related documents

Appeon provides the following user documents to assist you in understanding Appeon PowerServer and its capabilities:

• Introduction to Appeon:

Gives general introduction to Appeon PowerServer and its editions.

• Getting Started (for PowerServer Mobile):

Guides you though installing PowerBuilder and Appeon PowerServer, and developing and deploying a mobile application.

• New Features Guide:

Introduces new features and changes in Appeon PowerServer.

• PowerServer Mobile Tutorials:

Gives instructions on deploying, running, and debugging the mobile application, distributing native mobile apps, and configuring the PowerServer cluster.

• PowerServer Mobile (Offline) Tutorials:

Gives instructions on setting up the PowerServer Mobile (Offline) environment, and configuring, deploying, running, updating, and debugging the offline application.

• Appeon Installation Guide:

Provides instructions on how to install Appeon PowerServer successfully.

• Mobile UI Design & Development Guide:

Introduces general guidelines on designing and developing the mobile app and UI.

• Migration Guidelines for PowerServer Web:

A process-oriented guide that illustrates the complete diagram of the Appeon Web migration procedure and various topics related to steps in the procedure, and includes a tutorial that walks you through the entire process of deploying a small PowerBuilder application to the Web.

• Supported PB Features:

Provides a detailed list of supported PowerBuilder features which can be converted to the Web/Mobile with Appeon as well as which features are unsupported.

• PowerServer Toolkit User Guide:

Provides instructions on how to use the PowerServer Toolkit in Appeon PowerServer.

• Workarounds & API Guide:

Provides resolutions for unsupported features and various APIs to facilitate you to implement the features (including Web and mobile) that are not easy or impossible to implement in the PowerBuilder IDE.

• Appeon Workspace User Guide:

Gives a general introduction on Appeon Workspace and provides detailed instructions on how to use it.

• PowerServer Configuration Guide:

Provides instructions on how to configure PowerServer Monitor, establish connections between PowerServer and database servers, and configure AEM for maintaining PowerServer and the deployed applications.

• Web Server Configuration Guide:

Describes configuration instructions for different types of Web servers to work with the PowerServer.

• Troubleshooting Guide:

Provides information on troubleshooting issues; covering topics, such as product installation, application deployment, AEM, and Appeon application runtime issues.

• Appeon Performance Tuning Guide:

Provides instructions on how to modify a PowerBuilder application to achieve better performance from its corresponding Web/mobile application.

• Testing Appeon Web Applications with UFT:

Provides instructions on how to test Appeon Web applications with UFT.

# 1.4 If you need help

If you have any questions about this product or need assistance during the installation process, access the Technical Support Web site at <u>http://www.appeon.com/support</u>.

# **2 Server Configuration Tasks**

Server configuration for n-tier architecture is usually a daunting task that requires a wide range of server knowledge. The same rule applies to Appeon architecture. Appeon architecture resides in at least three types of servers: Web server, application server, and database server. Each server involves a third-party server product: for example, PowerServer can be installed to WebLogic, WebSphere, JBoss, SAP NetWeaver Application Server, or JEUS. A number of configuration tasks must be performed before an Appeon application can work on the Web or Mobile, and still there is more involved in the maintenance and management of the server.

This chapter will help you understand the configurations in this guide and will assist you to quickly locate the correct configuration information.

# 2.1 Scope of configurations discussed in this book

Appeon architecture is a typical n-tier architecture that can provide development and runtime environments for both Appeon and non-Appeon applications. This book focuses on the configurations for supporting Appeon applications in the architecture, and does not provide: (1) configurations for setting up the architecture, (2) configurations specific to the functioning and performance of third-party servers within the architecture.

The configurations needed for setting up the architecture are discussed in Installation Guide for .NET and the Web Server Configuration Guide, and therefore, will not be addressed in this guide.

Configurations specific to the functioning and performance of third-party servers in Appeon architecture may still impact the architecture. For example, indexing database tables has nothing to do with Appeon knowledge but can greatly improve the performance of an Appeon application. Although such configurations are not provided in this book, it is strongly recommended that you refer to the configuration documents of any third-party servers used and perform necessary configurations to achieve the best possible performance of Appeon architecture.

# 2.2 Configuration stages and tasks

Server configuration is divided into several stages as shown in the following table. Understanding which stage of the configuration, allows one to simply focus on the configurations recommended for that particular stage. This helps save time and effort of searching through the complete document for information.

Configuration During	For the Purpose of
Application Deployment	Ensuring that the application data displays correctly and that all functions in the application work correctly.
Debugging Process	Efficient debugging.
Security Management	Managing the security of applications and servers within the architecture.

Table 2.1	: Server	configuration	stages
-----------	----------	---------------	--------

Configuration During	For the Purpose of
Performance Management	Improving server performance.
Server Information Management	Managing server-related information.
Emergency Control	Restarting PowerServer automatically when it shuts down.

After reading the introduction in this section, you will find that most of the configurations can be performed in AEM. AEM is a Web tool designed for managing PowerServer and the deployed Web or mobile applications over the Internet or an intranet and can greatly simplify configuration.

### 2.2.1 Configuration during application deployment

The following table lists the server configuration tasks for ensuring that application data displays correctly and that all functions within the application work. Tasks marked as "in AEM" are performed in AEM.

Task	Description	See section
Database Connection	Establish the database connection between the application server and the database server by configuring data sources.	Database Connection Setup
(In AEM) Transaction Object	Set up static mapping between application transaction objects and data sources.	Transaction Objects
(In AEM) Decimal Precision	Select a proper decimal precision for the Appeon application.	Decimal Precision
(In AEM) DLL/OCX Files	Configure the mode for installing and downloading DLL and OCX files used in an application.	DLL/OCX Files
(In AEM) Registry Mode	Enable the Appeon Web or Appeon mobile applications to directly access the client machine Windows registry or use Appeon registry emulation, so that PowerBuilder registry functions will work properly.	Registry Mode
(In AEM) INI File Mode	Make the Appeon Web or Appeon mobile applications manipulate the INI files at the client or by Appeon emulation, so that INI file function will work properly.	INI File Mode
(In AEM) Error Message Mode	Specify the display mode for errors in different levels. They can be displayed in the status bar or in popup messages.	Error Message Mode
(In AEM) Charset	Specify the input charset and database charset to ensure characters in applications display correctly.	<u>Charset</u>

Table 2.2: Configuration tasks during application deployment

## 2.2.2 Configuration during debugging

The following table lists the server configuration tasks for efficient debugging in case of abnormal behavior of the Appeon Web or Appeon mobile applications.

Table 2.3: Configuration tasks during debugging process

Task	Description	See section
(In AEM) Log Mode	Set the log file generation mode.	Log Mode
(In AEM) Logging	View the log files generated by PowerServer or the application server.	Viewing Logs
(In AEM) Run Mode	Set the run mode for Web or mobile applications.	Run Mode

### 2.2.3 Configuration during security management

The following table lists the server configuration tasks for managing the security of applications and servers in Appeon architecture.

Task	Description	See section
Database security	Implement script-coded and database security for applications	<u>Database</u> <u>security</u>
(In AEM) AEM Login	Modify the AEM user name and password.	AEM Login
(In AEM) System Security	Set the system security mode and type.	<u>System</u> <u>Security</u>
(In AEM) Client Security	Limit the accessibility of an Appeon Web application or Appeon mobile application to the selected groups.	<u>Client</u> <u>Security</u>
(In AEM) Group Management	Create groups and grant access rights.	Group Management
(In AEM) User Management	Create user profiles and grant access rights.	User Management
(In AEM) Deployment Security	Limit the number of users permitted to deploy applications to PowerServer.	Deployment Security

Table 2.4: Configuration tasks during security management

## 2.2.4 Configuration during performance management

The following table lists the server configuration tasks for improving server performance.

Note: In order to maximize the performance of Appeon architecture, besides the tasks in the table, you must also follow instructions from the documents of all the related third-party servers.

Task	Description	See section
(In AEM) Active Sessions	Monitor all active sessions in the system. Some sessions can be killed if necessary.	Active Sessions
(In AEM) Active Transactions	Monitor all active transactions in the system. Some active transactions can be killed if necessary.	Active Transactions
(In AEM) Maintenance	Set the schedule for automatically clearing temporary files, or manually deleting temporary files, and the backing up configurations.	<u>Maintenance</u>
(In AEM) Deployment Sessions	Monitor all active deployment sessions in the system. Some active deployment sessions can be killed if necessary.	Deployment Sessions
(In AEM) Application Server Cache	Allocate server cache between deployed applications. Ensures that important applications are cached.	PowerServer Cache
(In AEM) DataWindow Data Cache	Cache DataWindow data on the server and/or client to improve data-reading performance.	DataWindow Data Cache
(In AEM) Multi- Thread Download	Download static resources with multi-threads to boost performance.	<u>Multi-</u> <u>Thread</u> Download
(In AEM) Encoding	Choose the proper encoding mode to reduce network traffic.	Encoding

 Table 2.5: Configuration tasks during performance management

### 2.2.5 Configuration during server information management

The following table lists the server configuration tasks for managing server-related information.

Task	Description	See section
(In AEM) Timeout	Set session timeout, transaction timeout, download timeout, and request timeout.	<u>Timeout</u>
(In AEM) Licensing	View license information, and activate or de-activate an PowerServer.	Licensing
(In AEM) Support	view the valid product support period and renew the support.	<u>Support</u>

Table 2.6: Configuration tasks during server information management

### 2.2.6 Configuration for emergency control

The following table lists the server configuration task with which PowerServer can be started automatically when it shuts down.

### Table 2.7: Configuration for emergency control

Task	Description	See section
Status	Configure the PowerServer Status Monitor so it can be used for	<u>Status</u>
Monitor	restarting PowerServer automatically.	<u>Monitor</u>

# **3 PowerServer Status Monitor**

# 3.1 Overview

### Note

PowerServer Status Monitor does not work with JEUS.

PowerServer Status Monitor (hereinafter referred to as "Status Monitor") is a small program installed along with PowerServer. It backs up PowerServer session information, monitors if PowerServer is in "started" status, and in the event that the server shuts down it automatically restarts PowerServer and recovers the runtime information.

# 3.2 Configuring Status Monitor

Verify the presence of the following files according to the PowerServer type. Each will need to be configured, with the exception of powerserver.jar, before Status Monitor can be run successfully.

PowerServer	Windows	<b>Unix\Linux</b>
WebLogic/WebSphere/JBoss/ NetWeaver Application	<appeon home="">\bin \appeonmonitor.bat</appeon>	<appeon home="">/bin/ appeonmonitor.sh</appeon>
Server	<appeon home="">\lib \powerserver.jar</appeon>	<appeon home="">/lib/ powerserver.jar</appeon>
	<appeon home="">\bin \appeonserver.bat</appeon>	<appeon home="">/bin/ appeonserver.sh</appeon>
	<appeon home="">\config \monitor.props</appeon>	<appeon home="">/config/ monitor.props</appeon>

### Table 3.1: Files for status monitor

Notes:

- 1. <Appeon Home> indicates the installation path of PowerServer.
- 2. Changes to the files will take effect after the Status Monitor is restarted.

## 3.2.1 Configuring appeonmonitor.bat

The appeonmonitor.bat file (Windows) or appeonmonitor.sh file (Unix\Linux) is the batch program run by Status Monitor.

Make the following changes to the settings in appeonmonitor.bat file (Windows) or appeonmonitor.sh file (Unix\Linux).

For appeonmonitor.bat and appeonmonitor.sh files, the settings and modification are almost the same. The only difference is that forward slash ("/") is used as the path separator in Unix  $\Linux$  while back slash ("\") is used in Windows.

Table 3.2	: Configure	appeonmonitor.bat
-----------	-------------	-------------------

Settings	Description
JBOSS_HOME	Specifies the path of JBoss. For example, JBOSS_HOME=C:\Program Files\jboss-eap-6.1.
JAVA_HOME	Specifies the JDK location, which must be the same one used by PowerServer. For example, JAVA_HOME=C:\Program Files\Java \jdk1.6.0_18.
	Note: 1) If PowerServer works on WebLogic, verify that the WLS_USER and WLS_PW variables in the startWebLogic.cmd (Windows) or startWebLogic.sh (Unix\Linux) file contain the correct login credentials.
	2) If PowerServer works on WebSphere, only when the IBM JDK is used can Status Monitor function properly.
APPEON_HOME	Specifies the PowerServer home directory.
	WebSphere: <was_home>\appeon</was_home>
	WebLogic: <wl_home>\appeon</wl_home>
	JBoss: <jb_home>\appeon</jb_home>
	Note: <was_home> indicates the home directory of WebSphere server; <wl_home> indicates the home directory of WebLogic; and <jb_home> indicates the home directory of JBoss.</jb_home></wl_home></was_home>
	For example, If PowerServer works on WebLogic 9.2, the PowerServer home directory is: APPEON_HOME= C:\bea\weblogic92\appeon.
	For example, if Appeon Server works on JBoss, the PowerServer home directory is: APPEON_HOME= C:\Program Files\jboss-eap-6.1\appeon.
J2EE_JAR	Changes the default setting according to the PowerServer in use:
	WebLogic: <wl_home>\server\lib\weblogic.jar</wl_home>
	WebSphere: <was_home>\lib\j2ee.jar</was_home>
	JBoss EAP: <jb_home>\modules\system\layers\base\javax\mail\api \main\mail-1.4.5-redhat-1.jar, <jb_home>\modules\system\layers\base \javax\ejb\api\main\jboss-ejb-api_3.1_spec-1.0.2.Final-redhat-2.jar</jb_home></jb_home>
	JBoss 7: <jb_home>\modules\system\layers\base\javax\mail\api\main \mail-1.4.4.jar, <jb_home>\modules\javax\ejb\api\main\jboss-ejb- api_3.1_spec-1.0.1.Final.jar</jb_home></jb_home>
	Note: In different JBoss builds, the name of jboss-ejb- api_3.1_spec-1.0.1.Final.jar may be slightly different. For example, if Appeon Server works on JBoss EAP 6.1, the J2EE_JAR directory is: J2EE_JAR=C:\Program Files\jboss-eap-6.1\modules\system\layers\base \javax\ejb\api\main\jboss-ejb-api_3.1_spec-1.0.1.Final.jar; C:\Program Files\jboss-eap-6.1\modules\system\layers\base\javax\mail\api\main \mail-1.4.5-redhat-1.jar.
CLASS_PATH	Default setting:

Settings	Description
	CLASS_PATH=% APPEON_HOME%\lib\appeonserver.jar;% J2EE_JAR %
	You do not need to make any changes to the default setting.
NeedToEncryptec	<b>EASPIND</b> e administrator password of the application server. For example, NeedToEncryptedEASPWD=appeon123.
	After you set the password, comment out the following script in appeonmonitor.bat, then run appeonmonitor.bat to encrypt the password, and after you get the encrypted password, make sure to clean the password here and then input the encrypted password to EASPWD below.
	"%JAVA_HOME%/bin/java.exe" -cp "%CLASS_PATH %" -Dappeon.home="%APPEON_HOME%" com.appeon.server.monitor.StatusMonitor -e "%NeedToEncryptedEASPWD%"
EASUSER	Specify the administrator user name of the application server. For example, EASUSER=admin@system. Note that the user name must be in this format "admin@system".
EASPWD	Input the encrypted password of the application server. The encrypted password is generated after you set NeedToEncryptedEASPWD. Please see "NeedToEncryptedEASPWD" for details.
	For example, EASPWD=YXBwZW9uMTIz.
	After you input the encrypted password here, make sure to clean the password in NeedToEncryptedEASPWD.

After you properly configure the above settings, make sure to uncomment the following scripts, so Status Monitor can start normally.

"%JAVA\_HOME%/bin/java.exe" -cp "%CLASS\_PATH%" -Dappeon.home="%APPEON\_HOME%"
com.appeon.server.monitor.StatusMonitor -e "%NeedToEncryptedEASPWD%"
"%JAVA\_HOME%/bin/java.exe" -cp "%CLASS\_PATH%" -Dappeon.home="%APPEON\_HOME%"
-Deas.user="%EASUSER%" -Deas.pwd="%EASPWD%" com.appeon.server.monitor.StatusMonitor

Here is a sample of a configured appeonmonitor.bat file:

```
@echo off
cls
SETLOCAL
title Appeon Server Status Monitor
REM Please replace <JBOSS_HOME> with the real path of JBOSS
set JBOSS_HOME=C:\Program Files\jboss-eap-6.1
set JAVA_HOME=C:\Program Files\Java\jdk1.6.0_18
set APPEON_HOME=C:\Program Files\jboss-eap-6.1\appeon
```

set J2EE\_JAR=C:\Program Files\jboss-eap-6.1\modules\system\layers\base\javax \ejb\api\main\jboss-ejb-api\_3.1\_spec-1.0.1.Final.jar; C:\Program Files\jbosseap-6.1\modules\system\layers\base\javax\mail\api\main\mail-1.4.5-redhat-1.jar set CLASS\_PATH=%JBOSS\_HOME%/lib/ext/appeonserver.jar;%J2EE\_JAR% REM Please replace <NeedToEncryptedEASPWD> with the administrator password of JBoss 6.x. Make sure to clean the password after you have encrypted it. set NeedToEncryptedEASPWD= REM Please replace <EASUSER> with the administrator user name of JBoss 6.x set EASUSER=admin@system REM Please replace <EASPWD> with the administrator password of JBoss 6.x that is encrypted set EASPWD=YXBwZW9uMTIz REM If you want to encrypt the administrator password of JBoss 6.x, please uncomment the line below "%JAVA\_HOME%/bin/java.exe" -cp "%CLASS\_PATH%" -Dappeon.home="%APPEON\_HOME%" com.appeon.server.monitor.StatusMonitor -e "%NeedToEncryptedEASPWD%" REM If you want to start status monitor, please uncomment the line below "%JAVA\_HOME%/bin/java.exe" -cp "%CLASS\_PATH%" -Dappeon.home="%APPEON\_HOME%" -Deas.user="%EASUSER%" -Deas.pwd="%EASPWD%" com.appeon.server.monitor.StatusMonitor echo Appeon Server Status Monitor terminated. PAUSE ENDLOCAL

### 3.2.2 Configuring appeonserver.bat

The appeonserver.bat file (Windows) or appeonserver.sh file (Unix\Linux) is the batch program run by Status Monitor when it detects that PowerServer has shut down.

#### 3.2.2.1 Configuring appeonserver.bat (Windows)

The appeonserver.bat file contains the following code:

```
@echo off
REM if use WebLogic, please replace <Domain> with real path and uncomment the line
below.
REM @start call "<Domain>\startWebLogic.cmd"
REM if use WebSphere, please replace <WebSphere> with real path and uncomment the
line below.
REM @start call "<WebSphere>\AppServer\bin\startServer.bat" server1
REM if use JBoss, please replace <JBoss> with real path uncomment and the line
below.
REM @start call "<JBoss>\bin\run.bat"
```

Make the following changes to the file:

- 1. Remove the notation "REM" before the command line that starts the application server/ PowerServer.
- 2. Replace the wildcard character string, which stands for the application server, with the home directory of the application server.

For example, if PowerServer works on JBoss WildFly 10, the following script should be modified.

#### Original script:

REM @start call "<JBoss>\bin\run.bat"

#### Modified script:

start cmd /c "D:\wildfly-10.0.0.Final\bin\standalone.bat"

#### 3.2.2.2 Configuring appeonserver.sh (Unix\Linux)

The appeonserver.sh file contains the following script:

```
#If use WebLogic, please uncomment the line below.
#"<Domain>/startWebLogic.sh"
#If use WebSphere, please uncomment the line below.
#"<WebSphere>/AppServer/bin/startServer.sh" server1
#If use JBoss, please uncomment the line below.
#"<Jboss>/bin/run.sh"
```

Make the following changes to the file:

- 1. Remove the notation "#" before the command line that starts the application server/ PowerServer.
- 2. Replace the wildcard character string that stands for the application server, with the home directory of the application server.

For example, if PowerServer is installed to JBoss WildFly 10, the following script should be modified.

Original script:

```
#"<Jboss>/bin/run.sh"
```

Modified script:

```
"/export/home/wildfly-10.0.0.Final/bin/standalone.sh"
```

### 3.2.3 Configuring monitor.props

The *monitor.props* file contains the property settings of Status Monitor. These property settings work for WebLogic, WebSphere, JBoss, and NetWeaver Application Server, except for

• Scheduled task settings, which are unsupported by WebLogic, WebSphere, JBoss, or NetWeaver Application Server.

Make the following changes to the property settings in *monitor.props*, as shown in the following table.

Note: If you have made changes to the instance names and instance ports, you will need to restart PowerServer to make the settings effective.

### Table 3.3: Configure monitor.props

Settings	Descriptions
com.appeon.server.monitor.instance.names	The names of server instances that need to be monitored.
	Separate multiple instance names with comma (",").
	Note that changes to this setting will not take effect until PowerServer is restarted.
com.appeon.server.monitor.instance.cpus	The information for CPU(s) of the server instances.
	The value ranges from CPU0 to CPU31. The value can also be an asterisk ("*"), which stands for all CPUs of the local machine.
	If there are more than one server, their names should be separated by comma (",") and ranked in the same order with com.appeon.server.monitor.instance.names. If one server has multiple CPUs, they can be connected by the plus sign ("+").
com.appeon.server.monitor.instance.ports	The port via which Status Monitor monitors PowerServer.
	Separate multiple server instances with comma (",") and range them in the same order with com.appeon.server.monitor.instance.names.
	Make sure the port number you specify is not occupied. Note that changes to this setting will not take effect until PowerServer is restarted.
com.appeon.server.monitor.instance.files	The files that Status Monitor will check when the server shuts down, for example, D:\wildfly-10.0.0.Final\appeon\repository \standalone\config\aem-config.xml.
	If there are more than one server instance, separate them with comma (",") and range them in the same order with com.appeon.server.monitor.instance.names.
com.appeon.server.monitor.instance.comman	The command line for starting PowerServer.
	Default setting:
	com.appeon.server.monitor.instance.comman dlines=appeonserver.bat

Settings	Descriptions
	If there are more than one server instance, separate them with comma (",") and
	range them in the same order with com.appeon.server.monitor.instance.names.
com.appeon.server.monitor.mail.smtp.server	The mail server that Status Monitor uses for sending notification emails.
	Contact your network administrator to get the valid mail server that can be accessed from the machine.
com.appeon.server.monitor.mail.smtp.reciev ers	The email address(es) of the recipient(s) to who Status Monitor will send the notification emails. It can contain one or multiple email addresses.
	Use the comma (",") as the email address separator if you want to specify multiple email receivers.
	The auto-mail functionality will not work unless being specified.
com.appeon.server.monitor.mail.smtp.port	The port number that is specified for the mail server.
	Contact your network administrator to get the valid port number of the mail server specified. The default port number is "25"
com.appeon.server.monitor.mail.smtp.sender.	The account for sending mails.
account	If the mail server uses SMTP to validate, an account for sending mails must be specified. Otherwise anonymous mails will be sent.
com.appeon.server.monitor.mail.smtp.sender.	The password for sending mails.
password	If the mail server uses SMTP to validate, a password must be specified.
com.appeon.server.monitor.session.checkcy	The cycle for automatic backup.
cle	The unit is second.
com.appeon.server.monitor.session.backup	The switch for turning on/off session auto- backup.
	Specify the value to true or false.
com.appeon.server.monitor.memory.checkcy cle ( <b>Obsolete</b> )	The cycle for checking memory information. The memory usage detected by Status Monitor may not be necessarily the same as the memory usage shown in the Windows task manager.

Settings	Descriptions
	The unit is second.
	Note
	This setting is obsolete, because it is
	Appeon no longer supports.
· · ·	
lue ( <b>Obsolete</b> )	memory usage.
	The value ranges from 0 to 100.
	If the memory usage reaches the peak, the Status Monitor will check the existence of active sessions. If there is none, the monitor will immediately restart the server instance(s). If there is one or more active sessions, the monitor will determine whether to restart the server instance(s) according to the restart flag. Before the restart, the monitor will determine whether the sessions will be backed up according the backup settings.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.
com.appeon.server.monitor.memory.minvalue (Obsolete)	The minimum value (in percentage) for memory usage.
	The value ranges from 0 to 100.
	If the memory usage reaches the bottom, the Status Monitor will check the existence of active sessions. If there is none, the monitor will immediately restart the server instance(s). If there is one or more, the monitor will continue checking until the memory usage reaches the peak.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.

Settings	Descriptions
com.appeons.erver.monitor.memory.restart ( <b>Obsolete</b> )	The switch to restart server instance by force when the memory usage reaches the peak.
	The value can be true or false.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.
com.appeon.server.monitor.scheduled.task.cy	The cycle for scheduled tasks.
cle ( <b>Obsolete</b> )	The value can be daily, weekly or monthly, among which only the daily mode is supported at present.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.
com.appeon.server.monitor.scheduled.task.w hen ( <b>Obsolete</b> )	The moment to start carrying out scheduled tasks.
	The value ranges from 00:00:00 to 23:59:59.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.
com.appeon.server.monitor.scheduled.task.re start ( <b>Obsolete</b> )	The switch to restart server instance(s) if active sessions still exist when starting to carry out scheduled tasks.
	The value can be true or false.
	Note
	This setting is obsolete, because it is effective only for EAServer which Appeon no longer supports.

## 3.2.4 Additional configuration for Status Monitor in PowerServer cluster

If a PowerServer works in a cluster, the PowerServer will not only back up the "active" sessions but also the "passive" sessions. The "passive" sessions are remote sessions created by another PowerServer in the cluster and backed up in the current PowerServer.

The "active" sessions for a PowerServer will always be restored if that PowerServer shuts down abnormally and then is restarted by its Status Monitor, while the "passive" sessions will be restored only if you select the "Enable Logical Restore with Status Monitor" option in the AEM <u>Cluster</u> tool. If this option is not selected, Status Monitor will only restore the "active" sessions and will not restore the "passive" sessions on a PowerServer.

# 3.3 Information backed up by Status Monitor

Status Monitor detects PowerServer status, backs up and restores session information, and automatically restarts PowerServer every time PowerServer is detected "shut-down". This is very helpful, because Status Monitor detects if PowerServer shuts down abnormally, and will automatically restart PowerServer while restoring the most recent state of PowerServer based on the last backup.

### 3.3.1 What is backed up?

Status Monitor periodically backs up PowerServer session information that includes:

- User authentication information
- References to PowerServer transaction components

Status Monitor does not back up:

• Information being processed in active transactions

# 3.4 Using Status Monitor

### 3.4.1 Starting Status Monitor

Step 1: Locate the *bin* subdirectory under <Appeon Home>/bin where appeonmonitor.bat (Windows) or appeonmonitor.sh (Unix\Linux) is stored. For example: D:\wildfly-10.0.0.Final \appeon\bin.

Step 2: Run the appeonmonitor.bat file (Windows) or appeonmonitor.sh (Unix\Linux) to start Status Monitor.

Note: In Unix\Linux, be sure to run Status Monitor in the background by executing the command "nohup statusmonitor.sh &". If Status Monitor runs in the foreground, executing a ctrl-c command for Status Monitor will stop both the Status Monitor and the PowerServer process started by Status Monitor.

Once Status Monitor is successfully started, the Status Monitor window displays, indicating that Status Monitor is functioning. To keep the Status Monitor running you must keep the window open or minimized. If you close the Status Monitor window, Status Monitor stops working, and loses the information that has been backed up.

## 3.4.2 Understanding the information in Status Monitor Window

Once Status Monitor and PowerServer are simultaneously running, the Status Monitor window as well as the configuration information will display as illustrated in the following figure.

#### Figure 3.1: Information in Status Monitor Window

```
Appeon Server Status Monitor
                                                                      _ 🗆 X
               : 18(s)
      Cycle
      [Restart server function enabled]
  Session Setting:
      Cycle
              : 18(s)
      [Backup function enabled]
  Scheduled Task Setting:
      Cycle
               : daily
              : 23:59:59
      Time
      [Restart server function enabled]
  Mail Setting:
      SMTP Server: appeon.dev.com
                                   Port: 25
      Mail Sendto: huangxuxia@appeon.dev.com
      [Mail function enabled]
      ______
[-]
```

PowerServer Status Monitor can monitor one or multiple server instances at the same time. You can tell how many server instances are configured for being monitored from the signs at the bottom left of the window. As shown in the above figure, there is only one server instance configured for being monitored. If the sign is shown as "[S]", the server instance is shut down.

# **4 Database Connection Setup**

# 4.1 Overview

The steps for configuring the database for an Appeon-deployed application are the same as the steps for configuring the database for a PowerBuilder application. However, the way the database server is accessed is different: a PowerBuilder application directly accesses the database server via transaction object(s), while an Appeon-deployed application accesses the database server via PowerServer data sources.

This chapter describes how to enable a deployed application to access its database. Two key tasks are involved:

- Setting up communication between the database server and PowerServer. This refers to setting up PowerServer data sources.
- Setting up communication between the deployed application and PowerServer. This refers to setting up the mapping between the application transaction objects and PowerServer data sources.

Some advanced configurations are also related to database connection setup (for example, database auditing). This chapter outlines common techniques for handling such configurations in the Appeon environment.

# 4.2 What is PowerServer data source?

PowerServer data source is actually the same terminology as data source in the following mainstream application servers: WebLogic, WebSphere, JBoss, NetWeaver, and JEUS.

PowerServer data source (for WebLogic, WebSphere, JBoss, NetWeaver Application Server, and JEUS) can only be configured in their corresponding application server management console.

For detailed instructions, please refer to the corresponding documents of WebLogic, WebSphere, JBoss, NetWeaver Application Server, or JEUS.

### 4.2.1 Why PowerServer data source?

The data source for a Web or mobile application is the counterpart to the transaction object in the target PowerBuilder application. The transaction properties in the target PowerBuilder application contain database connection parameters, which should be correspondingly configured in data sources.

The Appeon Web application and the Appeon mobile application relies on PowerServer data sources to interact with the database servers. When creating a data source, you can use different JDBC drivers. However, Appeon has some recommendations on which JDBC driver is to be used for certain types of databases.

## 4.2.2 Why JDBC driver only?

In the Appeon Web application and the Appeon mobile application, data-related operations are managed by PowerServer. The data related operations are built with J2EE technology and they require the JDBC interface. Regardless of the interface (ODBC, JDBC, or native driver)

target PowerBuilder application uses for its database connection, the Web application and the mobile application must use JDBC.

One issue with the JDBC interface is that most PowerBuilder applications use a native database driver, and there may be differences between the behavior of the native/ODBC database interface and the JDBC interface. Before you configure a JDBC data source, you should test your PowerBuilder applications with the JDBC driver to make sure it does not cause any issues.

## 4.2.3 Supported JDBC driver type

The JDBC data sources can use any of the four types of JDBC drivers:

Type 1: JDBC-ODBC Bridge

Type 2: Native-API/partly Java driver

Type 3: Net-protocol/all-Java driver

Type 4: Native-protocol/all-Java driver

Each type has advantages and disadvantages. You should run tests to decide which type of JDBC driver works the best for the specific application and database. Generally, Type 3 and Type 4 drivers show better performance than Type 2 drivers, so it is recommended that you evaluate Type 3 or Type 4 for both intranet and Internet deployments. Because of performance considerations, Type 2 drivers should only be used in an intranet environment where response times are generally faster.

### 4.2.4 JDBC driver preparation

### 4.2.4.1 Checklist for JDBC driver preparation

Before you configure a JDBC data source for your application database, the following JDBC driver file(s) must be copied to the PowerServer computer. Following is the checklist of the JDBC driver file(s) that should be copied to the directory.

Database	Driver Type	<b>Driver Files</b>	Availability of the Driver Files
SAP SQL Anywhere 8.0.2, 9.0, 10.0.1, 11.0, 12.0. 16.0, or 17.0	jConnect JDBC driver (Recommended)	jconn2.jar for jConnect 5.5, or jconn3.jar for jConnect 6	Available at %Sybase% \Shared\jConnect-5_5\classes or at %Sybase%\Shared \jConnect-6_0\classes. Note: Install sql_asa.sql provided at %Sybase%\Shared \jConnect-5_5\sp for jConnect to function properly.
	iAnywhere JDBC- ODBC driver	For PowerServer on Windows: dbjodbc8.dll, dbjodbc9.dll, or dbjodbc10.dll jodbc.jar	Available in SAP SQL Anywhere 8.0.2 Build 4361 or above. For earlier versions, you can obtain the files from <u>http://</u> <u>www.sybase.com/downloads</u> .

Table 4.1: Checklist of JDBC driver files

Database	Driver Type	<b>Driver Files</b>	Availability of the Driver Files
		For PowerServer on	Note: dbjodbc8.dll or
		Unix\Linux:	dbjodbc9.dll must be copied to
		dbjodbc8.so	%Sybase%\Shared\jdkversion\ire
		iodbc jar	bin. <i>jdkversion</i> indicates which
		jouoo.jui	example idk1 4 1 03
	Sun JDBC-ODBC driver	-	Bundled with the Java 2 SDK, Standard Edition, so there is no need to download it separately.
ASE	jConnect JDBC	jconn2.jar for	Available at %Sybase%
12.5.x or	driver	jConnect 5.5	\Shared\jConnect-5_5\classes
15.x		jconn3.jar for jConnect 6.0	or at %Sybase%\Shared \jConnect-6_0\classes.
		Note: ASE 15	Note: Install sql_server12.5.sql
		supports jConnect 6.0	sal server15.0 sal for ASE 15 for
		only.	jConnect to function properly.
SAP IQ	jConnect JDBC	jconn2.jar for	Available at %Sybase%
12.7.x or	driver	jConnect 5.5	\Shared\jConnect-5_5\classes
15.x		jconn3.jar for	or %Sybase%\Shared
		jConnect 6.0	\JConnect-6_0\classes.
	Sun JDBC-ODBC	-	Bundled with the Java 2 SDK,
	driver		Standard Edition, so there is no
			need to download it separately.
SAP	SAP In-Memory	Ngdbc.jar	Available at %SAP HANA%
1 00 36	driver		\ndochem\ngdoc.jar.
Oracle 8i	Oracle JDBC driver	classes12.zip	Available at the Oracle Web
		Oracle8i 8.1.7.1 Patch	site (http://www.oracle.com/
		nls_charset12.zip	<u>technetwork/database/features/</u> jdbc/index-091264.html).
Oracle 9i	Oracle JDBC driver	For use with JDK 1.3:	Available at the Oracle Web
		classes12.zip	site ( <u>http://www.oracle.com/</u>
		nls_charset12.zip	jdbc/index-091264.html).
		For use with JDK 1.4:	Note: Classes12.zip and
		Ojdbc14.jar	ojdbc14.jar cannot be placed in
			the same location and used at the same time.
Oracle	Oracle JDBC driver	For use with JDK 1.4:	Available at the Oracle Web
10g or		Oidbc14.jar	site ( <u>http://www.oracle.com/</u>
11g		Eor uso with IDV 1 5.	technetwork/database/features/
		For use with JDK 1.5:	<u>Jdbc/index-091264.html</u> ).

Database	Driver Type	<b>Driver Files</b>	Availability of the Driver Files
		Ojdbc15.jar	Note: Ojdbc14.jar and ojdbc15.jar cannot be placed in the same location and used at the same time.
Microsoft SQL Server 2000	jTDS JDBC driver (Recommended)	jtds-1.2.jar	Available at SourceForge Web site (http://sourceforge.net/ projects/jtds/). Note: You need to download the jtds-1.2-dist.zip file, which contains the jtds-1.2.jar file. According to our tests, jTDS JDBC driver is better than Microsoft SQL Server JDBC driver in the way that it can prevent memory leak and boost performance.
	Microsoft SQL Server JDBC driver	msbase.jar mssqlserver.jar msutil.jar	Available at the Microsoft Web site (http://www.microsoft.com/ downloads/en/details.aspx? FamilyID=99b21b65-e98f-4a61- b811-19912601fdc9&displaylang =en). Note: The files have different versions. Make sure the file sizes are equal or close to the following. msbase.jar: 281KB mssqlserver.jar: 66KB msutil.jar: 58KB
Microsoft SQL Server 2005, 2008, or 2012	jTDS JDBC driver (Recommended)	jtds-1.2.jar	Available at SourceForge Web site ( <u>http://sourceforge.net/</u> <u>projects/jtds/</u> ). Note: You need to download the jtds-1.2-dist.zip file, which contains the jtds-1.2.jar file.
	Microsoft SQL Server JDBC driver	sqljdbc.jar	Available at the Microsoft Web site (http://www.microsoft.com/ downloads/en/details.aspx? FamilyID=99b21b65-e98f-4a61- b811-19912601fdc9&displaylang =en).

Database	Driver Type	<b>Driver Files</b>	Availability of the Driver Files	
Microsoft SQL Server 2014, or 2016	jTDS JDBC driver (Recommended)	jtds-1.2.2.jar	Available at SourceForge Web site ( <u>http://sourceforge.net/</u> <u>projects/jtds/</u> ).	
	Microsoft SQL Server JDBC driver	sqljdbc4.jar	Available at the Microsoft Web site (http://www.microsoft.com/ downloads/en/details.aspx? FamilyID=99b21b65-e98f-4a61- b811-19912601fdc9&displaylang =en).	
IBM DB2 UDB 8.1, 8.2, 9.5 or	IBM JDBC driver	db2java.zip and/or db2jcc.jar	Available in the java or java12 folder of the DB2 Server installation directory.	
10.x			The JDBC driver must be exactly the same version as DB2.	
Informix 7.x, 8.x, 9.x, 10.x or 11.x	IBM Informix JDBC driver	ifxjdbc.jar and/or ifxjdbcx.jar	Available at the IBM Web site (http://www14.software.ibm.com/ webapp/download/search.jsp? go=y&rs=ifxjdbc).	
MySQL 5.5.x	MySQL Connector/J	mysql-connector- java-5.1.19-bin.jar	Available at %MySQL%\MySQL Connector J\mysql-connector- java-5.x.jar	
			Or download from <u>http://</u> www.mysql.com/products/ <u>connector/</u> .	
Teradata 13.0	Teradata JDBC driver	terajdbc4.jar tdgssconfig.jar	Available at the Teradata Web site ( <u>http://</u> <u>downloads.teradata.com/</u> <u>download/connectivity/jdbc-</u> <u>driver</u> ).	
PostgreSQ 9.2	PostgreSQL JDBC driver	For use with JDK 1.7 or 1.8: postgresql-9.3-1101.jd	Available at the PostgreSQL Web site ( <u>https://jdbc.postgresql.org/</u> .download.html). bc41.Jar	
		For use with JDK 1.6:		
		postgresql-9.3-1101.jd	jdbc4.jar	
		For use with JDK 1.4 or 1.5:		
		postgresql-9.3-1101.jd	bc3.jar	

### 4.2.4.2 Copying drivers to PowerServer

Copy the JDBC driver files to the proper directory in PowerServer. The directory varies with the type of application server that PowerServer is installed to, as shown in the table below.

Note: Configuring JDBC driver files in NetWeaver Application Server is different from those listed. For details on deploying JDBC driver files in NetWeaver Application Server, refer to <u>Setting up data source for NetWeaver</u>.

Server Type	Directory for Storing JDBC Files
WebLogic	It can be any directory, but the directory path and name must be added in the ClassPath variable of the startWebLogic.cmd (Windows) or startWebLogic.sh (Unix\Linux) file.
	If the directory is %WL_HOME%\server\lib folder (Windows) or \$WL_HOME/server/lib (Unix\Linux), where %WL_HOME% is the installation folder of the WebLogic server (for example, C:\bea \weblogic81\), it is unnecessary to update the ClassPath variable.
WebSphere	For Windows: %WAS_HOME%\lib (%WAS_HOME% is the installation folder of the WebSphere server) For Unix\Linux: \$WAS_HOME/lib
JBoss	For Windows: %JBOSS_HOME%\server\instance\lib (%JBOSS_HOME % indicates the WildFly or JBoss EAP installation path) For Unix\Linux: \$IBOSS_HOME/server/instance/lib
JEUS	For Windows: %JEUS_HOME%\lib\datasource (%JEUS_HOME% indicates the JEUS installation path)
	For Unix\Linux: \$JEUS_HOME/lib/datasource

Table 4.2: Copy drivers to PowerServer

Important Note: Remember to restart PowerServer after copying files.

# 4.3 Setting up PowerServer data sources

The data source for the Web application and the mobile application is the counterpart to the transaction object in the target PowerBuilder application. The transaction properties in the target PowerBuilder application contain database connection parameters, which should be correspondingly configured in data sources.

The Appeon Web application or the Appeon mobile application relies on PowerServer JDBC data sources to interact with the database servers. When creating a JDBC data source, you can use different JDBC drivers. However, Appeon has some recommendations on which JDBC driver is to be used for certain types of databases.

This section gives detailed instructions on configuring data sources in WebLogic, WebSphere, JBoss, NetWeaver Application Server, and JEUS. If you have problems creating JDBC data sources, refer to the documentations from the database/JDBC driver vendor or SAP NetWeaver, Oracle WebLogic, IBM WebSphere, JBoss and TmaxSoft JEUS.

### 4.3.1 Setting up data source for WebLogic

### 4.3.1.1 Setting up data source for WebLogic 8.1

The following section will take one database type (SQL Anywhere database with jConnect JDBC driver) as an example to show you how to create a data source for WebLogic, you

can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

You can create a connection pool and a data source using either the WebLogic server console or the configuration wizard.

Note: the JNDI name specified for the data source will be regarded as the data source name by PowerServer and AEM.

#### 4.3.1.1.1 Creating a JDBC connection pool

- 1. Start the WebLogic Server for your domain.
- 2. Log on to the WebLogic Server Console.
- 3. Go to **Services** > **JDBC** > **Connection Pools**.

#### Figure 4.1: Configure a JDBC connection pool

🚽 WebLogic Server Console - Microsoft Internet Explorer	WebLogic Server Console - Microsoft Int
Ele Ede Yew Favorites Inols Help	Ele Edit Yew Favorites Iools Help
4+Back • → → ② ② ③ ③ ②Search @Pevontes ③Media ③ ③ ③ • ④ • ④ • ⑤	4=Back> · 🔘 🔄 🖾 📿 Search
Agdress 👩 http://locahost:7001/console/actions/mbean/NBean/NBean/YramesetAction/body/Frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_110409307509384New=fake&frame3d=wl_console_frame_3d=wl_console_frame3	Address a http://localhost:7001/console/actio
Conside     Mydomain> JDBC Connection Pools     Mode and the set of the	Console mrwdomain  Servers Clusters Cl

- 4. Click the **Configure a new JDBC Connection Pool** link.
- 5. Select the database type and driver from the dropdown list boxes and click **Continue**.

### Figure 4.2: Choose database

WebLogic Server Console - Microsof	t Internet Explorer			. 8 ×		
Elle Edit Yew Povontes Iools	Rep					
42 Back + ->						
			260			
<ul> <li>Console</li> <li>mydomain</li> </ul>	mydomain> JDBC Connection Pools> Configure	<b>#@</b> ?	BEA 🥻	ea.		
Giusters	Connected to : tocshost :7001   You are logged in as : weblogic   Logout					
Machines     Deployments     Postage	Configure a JDBC Connection Pool Choose database					
B Contents      B Contents      B Contents      Domain Log Filters						
Tasks	The following steps will help you create and deploy a connection pool. You can change configuration inform wish. Select the database type and driver for your new connection pool.	ation and deploye	nent options later if	you		
	Database Type: Sybase					
	DetaDirect's Sybase Driver (Type 4XA) Versions:11X, 12X DataDirect's Sybase Driver (Type 4) Versions:11X, 12X Sybase's Driver (Type 4XA) Versions:5X Database Driver: Sybase's Driver (Type 4) Versions:5X Other		2			
	Note: Not all drivers in the list are installed. You may need to install the driver you select before you select 0 class.	ican use it. If you	ar driver is not listed	L		
	Weblogic Server JDBC Certified					
			Continue	8		
				annound.		
Applet navapplet started	1	8 (20) (20) (20)	Trusted sites			

6. Choose a name for the new connection pool (for example, appeontutor) and fill in the blanks for the SQL Anywhere database. Click **Continue**.

### Table 4.3: Connection pool properties

Name	Input the name of the new connection pool
Driver classname	com.sybase.jdbc2.jdbc.SybDriver
URL	jdbc:sybase:Tds: <i>hostname</i> :2638/ <i>dbname</i> (The default port of the SQL Anywhere database is 2638)
Database User name	Type the database login username. The username is set at the database server.
Password	Type the database login password. The password is set at the database server.

### **Figure 4.3: Data source properties**

=Back • -> - 🔘 🗈 🗂 🔞 Seard	Tevortes @Meda 3 2-8	9 Q · D	
idress 🛃 http://localhost:7001/console/acti	ns/mbean/MBeanFramesetAction?bodyFrame	eId=wl_console_frame_10914722959218#sNew=false8fram	neld=#l_console_frame_10914722959228si 💌 🖗
Console Imydomain Imilia Servers	mydomain> JDBC Connection Po Connected to : locahost :7001   You	oals> Canfigure ere laggest in as : weblagio   Laggad	filler ? Bea 🕼
Machines     Deployments     Sovice	Configure a JDBC Connection I	Paol	
E DEC	Define and test connection		
Connection Pools MultiPools Deta Sources Data Source Factories MultiPool Messaging Bridge	Name your new connection pool a properties you define. Name: The name of this JDBC con	and define connection properties. You can option appeontutor mection pool.	ally test a database connection using the
ITA	Connection Properties		
B SNMP WTC VLEC (deprecated) Joint Virtual Hosts	Briver Classmanne: The full package name of a driver class must be in the	com sybase jdbc2 jdbc.SybDriver DBC driver class used to create the physical database cor classpath of any server to which it is deployed.)	nections in the connection pool. (Note that this
🕮 Mail 💷 FileT3	URL	idbc:sybase:Tds:192.0.2.29:2638	
E E Security	The URL of the database to	o connect to. The format of the URL varies by JDBC driver.	
Tasks	Database User Name:	dba	
	The database account use	er name used in the physical database connection.	
	Password		
	Confirm Password:	800	
	The detabase account new	meand used in the physical detabase connection	

- 7. Test your connection to verify that you can connect to your database.
- 8. Create and deploy the new connection pool.

### 4.3.1.1.2 Configuring a JDBC data source

1. Go to **Services** > **JDBC** > **Data Sources**.

#### Figure 4.4: Configure a JDBC data source



### 2. Click the **Configure a new JDBC Data Source** link.

3. Specify the new data source name and JNDI name and click **Continue**. You can use default values for the other options.

Note: The JNDI name will be used as the data source in AEM.

### **Figure 4.5: Data source properties**

·Back • → · ② ② ③ ④ ②Search	👍 Fevorites (@Meda 🤰 🔄 • 🔄 🕲 隆
dress 😰 http://localhost:7001/console/acti	ons/mbean/MBeanFrancesetAction/body/FrameId=wl_console_frame_110430491000228/Mew=Fabe8/FrameId=wl_console_frame_11(🗾 🔗 Go 🛛 Links 🥗 🧔
dess bit http://docalhost:7001/console/acti Console mydomain Gusters Cousters Couste	Insinbean/Mean/FrancestAction/body/Francib-will_concole_france_1104004910002064/Hew=FaketofranceId=will_concole_france_110 @ Con link * * * * * * * * * * * * * * * * * * *
🕋 Domain Log Filters 🕋 Tasks	Specifies whether the JDBC resource will emulate participation in a global transaction. This option is only applicable when the associated connection pool uses a non-XA JDBC driver and when global transactions are honored in the data source.

4. Select the newly created connection pool in the dropdown list box and click **Continue**.
#### Figure 4.6: Select the connection pool



5. Select the server to which you want to deploy the JDBC data source, and click Create.

## Figure 4.7: Target the data source



6. Confirm the Deployed status of the data source is "true" in the JDBC Data Sources window.

## Figure 4.8: Deployed status

jie Edit View Favorites Icols Help	ternet explorer								-
Head • + • 🗿 🗿 🖄 🔍 Search	Gelfavorites	Mede 🕑 🖏.	30.00	<b>i</b>					-
ddress 🕘 http://localhost:7001/console/actic	ns/mbean/MBeanFra	mesetAction?bodyPr	amelid=wl_console_fra	ne_11043049100	025JsNew=false6fr	rame3d=wl_cor	sole_frame_11	• 260	Links 30
• Console 1 🕘 mydomain	mydomain>	JDBC Data :	Sources				<b>##</b> ?	BEA .	bea
Gueters	Connected to :	localhost :7001	You are log	ged in as : we	blogic   <u>L</u>	ogout			
Deployments     JCOM     JD8C     JD8C     MultiPools     Data Sources     Data Source Factories     H _ JMS	A JDBC data s can use a JDB When one or n displays key in link.	cource is an object C data source to nore JDBC data s information about of a <u>new JDBC</u> e this view	t bound to the JND get a database cor ources are configu each of them. To cr Data Source	l tree that point mection from a ed in the currer eate a JDBC da	s to a JDBC cor connection poo nt WebLogic Se ata source, click	nnection poo I or multipoo rver domain, : the Configu	l or JDBC mu L this JDBC Da re a new JDB	itipool Appli ata Sources C Data Sour	cations page ce
JTA JTA B SNMP WTC	Name	JNDIName	Pool Name	Row Prefetch Enabled	Enable Two Phase Commit	Stream Chunk Size	Row Prefetch Size	Deployed	
WLEC (deprecated) Jott Virtual Hosts Mail	MyJDBC Data Source	MyJDBC Data Source	MyJDBC Connection Pool	false	false	256	48	true	80
FileT3     Security     Domain Log Filters     Tasks									
								Trated at	-

#### 4.3.1.2 Setting up data source for WebLogic 11g

The following section will take one database type (SQL Anywhere database with jConnect 6.0 JDBC driver) as an example to show you how to create a data source for WebLogic, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

You can create a data source using either the WebLogic server console or the configuration wizard.

Detailed steps are as below:

- Step 1: Start the Admin Server for WebLogic Server Domain.
- Step 2: Log on to the WebLogic Server Administration Console.
- Step 3: In the **Domain Structure** section, select **Services** > **JDBC** > **Data Sources**.
- Step 4: On the summary of **Summary of JDBC Data Sources** page, click New.

## Figure 4.9: The Summary of JDBC Data sources page

ORACLE WebLogic Server® Administration Console

Change Center	tà Home	il on Out Preferences	Record Hein	
View changes and restarts			livecord (risib	
Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete items in this domain.	Home >St	ummany of Deployments >Summ	nary of Services: JDBC >Summary of JDBC Data Sources	
	Summ	nary of JDBC Data Sou	urces	
Domain Structure  ppeon  Environment Deployments Services  DubBC DubBC DubBC DubBC Data Sources DutBC Persistent Stores Environment NUD Providers	A JDI Iook This Cust Data 5	BC data source is an object up a data source on the JNC page summarizes the JDB( comize this table Sources(Filtered - More Col comize the stable	t bound to the JNDI tree that provides database connectivity th DI tree and then borrow a database connection from a data s C data source objects that have been created in this domain. Jumns Exist)	rrough a pool of JDBC connections. Applications can ource. Showing 1 to 1 of 1 Previous   Next
Work Contexts XML Registries		Name 🚕	JNDI Name	Targets
→XML Entity Caches →jCOM		Appeonsample2	Appeonsample2	AdminServer
	Ne	Delete	·	Showing 1 to 1 of 1 Previous   Next

Step 5: On the **JDBC Data Source Properties** page, enter or select the following information and then click **Next**.

Figure 4.10: JDBC Data Source Properties page

delete items in this domain.			
)	Create a New JDBC Da	ata Source	
Domain Structure	Back Next Finish	Cancel	
appeon  -Environment -Deployments	JDBC Data Source Propert	<b>ties</b> II be used to identify your new JDBC data source.	
	* Indicates required fields		
Data Sources Multi Data Sources Data Source Factories	What would you like to name	your new JDBC data source?	
	What JNDI name would you	like to assign to your new JDBC Data Source?	
XML Entity Caches	XML Entity Caches jCOM JINDI Name:		
How do I 🖻			
Create JDBC data sources			
Create LLR-enabled JDBC data sources	What database type would y	ou like to select?	
	Database Type:	Sybase	
System Status 🗖	What database driver would	you like to use to create database connections?	
Health of Running Servers	Database Driver:	Sybase's Driver (Type 4) Versions:6.X	
Failed (0)	Back Next Finish	Cancel	
Overloaded (0)			
Worning (0)			

Fill in details as required in the table below.

Field	Description	Value
Name	Enter a desired new JDBC data source name.	Appeonsample
JNDI Name	Enter a JNDI name that you like to assign to your new JDBC Data Source.	Appeonsample
	Note: The JNDI name will be used as the data source name in AEM.	
Database Type	Select the database type from the dropdown list box.	SAP
Database Driver	Select the database drive from the dropdown list box.	SAP's Driver (Type 4) Versions:6.X

## Table 4.4: JDBC Data Source Properties

Step 6: On the **Transactions Options** page, check the **Supports Global Transactions** checkbox and select the **One-Phase Commit** radio button, and then click **Next**.

### **Figure 4.11: Transaction options**

delete iterito in uno dorriani.	
<u> </u>	Create a New JDBC Data Source
Domain Structure	Back Ned Finisin Cancel
appeon  B-Environment Deployments	Transaction Options You have selected non-X4.JDBC driver to create database connection in your new data source.
E→Services E→Messaging E→JDBC	Does this data source support global transactions? If yes, please choose the transaction protocol for this data source.
Multi Data Sources	
	Select this option if you want to enable non-XAJDBC connections from the data source to participate in global transactions using the Logging Last Resource (LLR) transaction optimization. Recommended in place of Emulate Two- Phase Commit.
XML Registries XML Entity Caches	C Logging Last Resource
JCOM I	Select this option if you want to enable non-X4 JDBC connections from the data source to emulate participation in global transactions using JTA Select this option only if your application can tolerate heuristic conditions.
	C Emulate Two-Phase Commit
How do I	Select this option if you want to enable non-X4.UBBC connections from the data source to participate in global transactions using the one-phase commit transaction processing. With this option, no other resources can participate in global transactions using the one-phase commit transaction processing. With this option, no other resources can participate in global transactions using the one-phase commit transaction processing. With this option, no other resources can participate in global transactions using the one-phase commit transaction processing. With this option, no other resources can participate in global transactions using the one-phase commit transaction processing.
Create LLR-enabled JDBC data	
sources	(* Une-Image Commit
	Back Ned Finish Cancel
System Status	

Step 7: On the **Connection Properties** page, enter the following information, and then click **Next.** 

## **Figure 4.12: Connection Properties page**

	Create a New JDBC Data Source				
Domain Structure	Back Next Finish Cancel				
appeon	Connection Properties				
Deployments	Define Connection Properties.				
⊡-Services ⊕-Messaging	What is the name of database you would like to connect to?				
È-JDBC →Data Sources →Multi Data Sources	Database Name:	Appeonsample			
Data Source Factories	What is the name or IP address of the database server?				
Foreign JNDI Providers	Host Name:	192.0.3.142			
	What is the port on the database server used to connect to the database?				
	Port:	2638			
How do I	What database account user name do you want to use to crea	ate database connections?			
Create JDBC data sources					
Create LLR-enabled JDBC data	Database User Name:	dba			
sources	What is the database account password to use to create database connections?				
System Status	Password:				
Health of Running Servers	Confirm Password:				
Failed (0)					
Critical (0)	Back Next Finish Cancel				
Overloaded (0)	Overloaded (0)				
Warning (fl)					

Fill in details as required in the table below.

Table 4.5:	Connection	<b>Properties</b>	page
------------	------------	-------------------	------

Field	Description	Value
Database Name	Enter a database name that you would like to connect.	Appeonsample
Host Name	Enter a host name or IP address of the database server.	192.0.3.142
Port	Enter a database port on the database server used to connect to the database.	2638
Database User Name	Enter the database account user name that you want to use to create the database connections.	dba
Password	Enter the database account password that you want to use to create the database connections.	sql
Confirm Password	Enter the same password for confirmation.	sql

Step 8: On the **Test Database Connection** page, specify the **Driver Class Name** and the **URL**, and then click **Test Configuration**. If the test is successful, A "Connection test succeeded" message appears at the top of the page. If the test is unsuccessful, you should correct any configuration errors and retry the test. And then click **Next**.

## Figure 4.13: Test Database Connection page

delete items in this domain.	Create a New IDRC Data Seurag		
	Create a New JDBC Data Source		
Domain Structure	Test Configuration Back Next Finish Cancel		
appeon	Test Database Connection		
Deployments ⊖-Services ∲-Messaging ⊖-JDBC Data Sources Multi Data Sources	Test the database availability and the connection properties you provided.		
	What is the full package name of JDBC driver class used to create database c	onnections in the connection pool?	
	(Note that this driver class must be in the classpath of any server to which it is	deployed.)	
Data Source Factories Persistent Stores Foreign JNDI Providers	Driver Class Name:	base.jdbc3.jdbc.SybDriver	
Work Contexts XML Registries XML Entity Caches	What is the URL of the database to connect to? The format of the URL varies b	y JDBC driver.	
	URL:	8.142:2638/Appeonsample	
	What database account user name do you want to use to create database con	nections?	
How do I	Database User Name:	dba	
Create LLR-enabled JDBC data	What is the database account password to use to create database connections?		
sources	(Note: for secure password management, enter the password in the Password	d field instead of the Properties field below)	
System Status	Password:	•••••	
Health of Running Servers	Confirm Password:		
Failed (0)			
Critical (0)	What are the properties to pass to the JDBC driver when creating database co	nnections?	
Warning (0)	Properties:		
OK (1)	url=jdbc:sybase:Tds:192.0.3.142:2638/App		
	networkProtocol=Tds		
	portNumber=2638 userName=dba		
	databaseName=Appeonsample		
	What table name or SQL statement would you like to use to test database con	nections?	
	Test Table Name:		
	SQL SELECT 1		
	Test Configuration Back Next Finish Cancel		

Fill in details as required in the table below.

#### Table 4.6: Specify the Driver Class Name and the URL

Field	Description	Value
Driver Class Name	Enter the driver name of the database specified.	com.sybase.jdbc3.jdbc.SybDriver
URL	Enter the server name of the database specified.	jdbc:sybase:Tds:Hostname:Port/ ServiceName For example: jdbc:sybase:Tds:192.0.3.142:2638/ Appeonsample.

Step 9: On the **Select Targets** page, select the **AdminServer** check box, and then click **Finish**.

### Figure 4.14: Select Targets Page

)	Create a New JDBC Data Source
Domain Structure	Back Next Finish Cancel
appeon ▲ ⊕-Environment →-Deployments ⊖-SetWees ⊕-Messaging ⊕-JDBC →-Data Sources →-Multi Data Sources	Select Targets You can select one or more targets to deploy your new JDBC data source. If you don't select a target, the data source will be created but not deployed. You will need to deploy the data source at a later time. Servers          Servers         Image: Administerver
L-Data Source Factories Persistent Stores Foreign JNDI Providers Work Contexts XML Registries XML Entity Caches	Back Finish Cancel

Step 10: On the **Summary of JDBC Data Sources** page, the Data Source that you created appears in the list, and then click the link to the name of the new data source in the **Data Sources** window.

#### Figure 4.15: Summary of JDBC Data Sources page

ORACLE' WebLogic Se	erver® Administration Console				
Change Center View Changes and restarts Configuration editing is enabled. Future changes will automatically be activated as you modify, add or delete tems in this domain.	Welcome, sppson Connected to sppson      Home (Log Out (Preferences (IM) Record (Help      Connel)      Home > Summary of UDBC Data Sources      Messages      All changes have been activated. No restarts are necessary.				
Domain Structure           appeen           ⊕-Environment           ⊡-Deptopments           ⊕-Bervices           ⊕-Unit Drain Sources           □-Date Drains Sources           □-Date Drains Sources           □-Destructes           □-Persistent Stores           □-Persistent Stores           □-Persistent Stores           □-Vork Contexts	Domain Structure appoint         Deployments         Deployments				
-XML Entity Caches	New Delete		Showing 1 to 2 of 2 Previous   Next		
How do I	Appeonsample	Appeonsample	AdminServer		
Create JDBC data sources	Appeonsample2	Appeonsample2	AdminServer		
Delete JDBC data sources	New Delete		Showing 1 to 2 of 2 Previous   Next		

Step 11: (Important) On the Settings for the base\_domain page, click appeon in the Domain Structure section and then select Security tab page. Select Anonymous Admin Lookup Enabled check box and click Save. This will allow AEM to read the JNDI Names.

Figure 4.16: Settings for the base\_domain page

	Settings for appeon				
Domain Structure	Configuration Monitoring Control Security W	Veb Service Security Notes			
appeon ★ ⊡-Environment ⊡-Deployments ⊡-Services ⊕-Messaging ⊕-JDBC □-Data Sources →-Multi Data Sources	General Filter Unlock User Embedded LDAP	Roles Policies			
	This page allows you to define the general security settings for this WebLogic Server domain. Use this page to change the default security realm for the WebLogic domain.				
Persistent Stores Foreign JNDI Providers	🧬 Default Realm:	myrealm 💌	Select the security realm that should be used as the default (active) realm for this WebLogic Server domain. More Info		
XML Registries XML Entity Caches jCOM	🗹 🏘 Anonymous Admin Lookup Enabled		Specifies whether anonymous, read-only access to WebLogic Server MBeans should be allowed from the MBeanHome API. <u>More Info</u>		
	Cross Domain Security Enabled		Specifies whether or not cross-domain security is enabled for the domain. More info		
How do L Configure new security realms Change the default security realm Change the default security realm Enable Cross Comain Security Detween domains Cross & Cross-Comain Security Credential Kapping Reset the EnforceStrictURLPattern flag	Excluded Domain Names:		Specifies a list of remote domain names that are to be excluded from the cross-domain checks. <b>Nore tric</b>		

Step 12: Choose **All Programs** > **Oracle WebLogic** > **User Projects** > **appeon** from the **Windows Start** menu to restart your WebLogic server for configuration changes to take effect.

Step 13: In order to test the connection, please log on to Appeon AEM to configure a Transaction Object and then test it.

## 4.3.2 Setting up data source for WebSphere

### 4.3.2.1 Setting up data source for WebSphere 6.1

The following section will take one database type (Oracle database with Oracle JDBC driver) as an example to show you how to create a data source for WebSphere, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

## Note:

- 1. The JNDI name specified for the data source will be regarded as the data source name by PowerServer and AEM.
- 2. If the **global security mode** is turned on in WebSphere, AEM will not be able to access the WebSphere data sources. Please refer to <u>Section 4.3.2.3</u>, "Required configurations when global security is on" for solutions.

#### 4.3.2.1.1 Updating JDBC driver path in master configuration

1. Start the WebSphere Server and log on to the WebSphere Server Console.

2. Click **Environment** > **Manage WebSphere Variable** in the console.

3. Set the path of the Oracle JDBC driver to the value of the ORACLE\_JDBC\_DRIVER\_PATH variable.

As required in <u>JDBC driver preparation</u>, the path of the Oracle JDBC driver is %WAS\_HOME%\lib\ (Windows) or \$WAS\_HOME/lib/ (Unix\Linux). WAS\_HOME is the installation folder of the WebSphere platform.

4. Save changes to the ORACLE\_JDBC\_DRIVER\_PATH variable in the master configuration.

#### 4.3.2.1.2 Creating a new J2C authentication data entry

1. Click **Security** > JAAS Configuration in the WebSphere administrative console, then click J2C Authentication Data.

2. Click **New** to create a new J2C authentication data entry.

## Figure 4.17: New J2C authentication data entry

<b>General Proper</b>	ties	
Allas	*	Specifies the name of the authentication data entry.
User ID	*	<ol> <li>Specifies the J2C authentication data user ID.</li> </ol>
Password	•	I Specifies the password to use for the target Enterprise Information System.
Description		Specifies an optional description of the authentication data entry. For example, this authentication data entry is used to connect to DB2.

Fill in details as required in the table below.

#### Table 4.7: Details for the new authentication data entry

A	lias	Enter a suitable (short) name, such as "UDDIAlias"
U	serid	Enter the database user ID used to read and write to the UDDI registry database.
Pa	assword	Enter the password associated with the user ID specified above.
D	escription	Enter a suitable description of the chosen user ID or leave it blank.

3. Click **Apply** and save changes to the master configuration.

#### 4.3.2.1.3 Creating and configuring a JDBC provider

- 1. Click **Resources** | **JDBC Providers** in the WebSphere administrative console.
- 2. Click New. The JDBC Providers configuration window opens.

#### Figure 4.18: JDBC Providers configuration window

С	Cell	yihuaming	Use scope settings to limit the availability of resources to a particular cell, node, or server.
œ	→ Node	yihuaming	when the witch is and created in this view, they will be created within the current scope.
с	Server	server1	
Ap	ply		
] Filter	vences		
1 11010	Delete		
New	Delete		

## 3. Select the correct JDBC provider type. For example, Oracle JDBC Driver.

Configuration	rties		
JDBC Providers	User-defined JDBC Provider		I If the list of supported JDBC Provider types
	Cloudscape JDBC Provider Cloudscape JDBC Provider (XA) Cloudscape Network Server Using Universal JDBC Driver Informix JDBC Driver Informix JDBC Driver Sybase JDBC Driver	*	does not include the JDBC Provider that you wish to use, select the 'User-Defined JDBC Provider'. You will need to consult the documentation for the JDBC Provider for more information on specific properties that may be required by that provider.
Apply OK	Sybase JDBC Driver (XA) Toracle JDBC Driver		
	Oracle JDBC Driver (XA) DataDirect ConnectJDBC type 4 driver for MS SQL Server DataDirect ConnectJDBC type 4 driver for MS SQL Server (XA)	*	

#### Figure 4.19: Select JDBC Provider type

4. Select the driver provider and driver file.

## Figure 4.20: JDBC driver provider and driver file

Configuration		
General Properties		11
Scope	* cells; yihuaming; nodes; yihuaming	The scope of the configured resource. This value indicates the configuration location for the configuration file.
Name	Oracle JDBC Driver	The name of the resource provider.
Description	Oracle JDBC Driver	A text description for the resource provider.
Classpath	\${ORACLE_JDBC_DRIVER_PATH}/ojdbc14.jar	A list of paths or JAR file names which together form the location for the resource provider classes. Classpath entries are separated by using the ENTER key and must not contain path separator characters (such as '' or ''). Classpaths may contain variable (symbolic) names which can be substituted using a variable map. Check your drivers installation notes for specific JAR file names which are required.

The Classpath field displays the path to the JDBC file that is configured in the WebSphere variable, for example, the ORACLE\_JDBC\_DRIVER\_PATH driver.

5. Click **OK** to return to the JDBC providers page, where the new JDBC driver appears in the list.

6. Save the settings.

## 4.3.2.1.4 Creating a data source

- 1. Click **Resources** > **JDBC Providers** in the administrative console.
- 2. Choose the JDBC resource provider under which you want to create the data source.

3. Click the **Data Sources** link under **Additional Properties**. The Data sources page is displayed.

#### Figure 4.21: Data source page

xtat 0		
Filter		
) Preferences		
New Delete Tes	t Connection	
116TY   DOIDLO   163		

- 4. Click **New** to display the Data source settings page.
- 5. Specify the data source name and JNDI name of the data source.

#### Note:

- The JNDI name specified for the data source will be regarded as the data source name by PowerServer and AEM.
- If the **global security mode** is turned on in WebSphere, AEM will not be able to access the WebSphere data sources. Please refer to <u>Section 4.3.2.3</u>, "<u>Required configurations when</u> <u>global security is on</u>" for solutions.

### Figure 4.22: Data source properties

Configuration				
General Properties				
Scope	<ul> <li>cells:yihuaming:nodes:yihuaming</li> </ul>	The scope of the configured resource. This value indicates the configuration location for the configuration file.		
Name	* testing_oracle	The required display name for the resource.     The JNDI name for the resource.		
JNDI Name	testing_oracle			

6. Select the J2C authentication data entry configured in <u>Creating a new J2C authentication</u> <u>data entry</u> in the Container-managed Authentication Alias list box.

7. Click **Apply** and **OK** to return to the Data Sources window. The name of the new data source displays in the window.

8. Click the name of the new data source in the Data Sources window.

9. Click the link to Custom Properties in the Additional Properties of the data source configuration window.

#### Figure 4.23: Additional properties

Additional Prop	erties
Connection Pool	An optional set of connection pool settings.
Custom Properties	Properties that may be required for Resource Providers and Resource Factories. For example, most database vendors require additional custom properties for data sources that will access the database.

10. Configure all the required fields according to the instructions in the window. For example, set the URL property to jdbc:oracle:thin:@192.0.0.51:1521:testing if Oracle 9i, 10g, and 11g, or jdbc:oracle:thin:@//192.0.0.51:1521/testing if Oracle 12c.

Figure 4.24:	Data	source	URL	property
--------------	------	--------	-----	----------

General P	roperties	
Scope	<ul> <li>cells: yihuaming: nodes: yihuaming</li> </ul>	The scope of the configured resource. This value indicates the configuration location for the configuration file.
Required	true	
Name	URL	Name associated with this property (for example, PortNumber and ConnectionURL).
Value	pracle:thin:@192.0.0.51:1521:testing	Value associated with this property in this property set.
Description	This is a required property. The URL indicating the database from which the Data Source will obtain connections, such as 'jdbc:oracle:thin:@localhost:1521:sample' for thin driver and 'jdbc:oracle:oci8:@sample' for thick driver.	i Text to describe any bounds or well- defined values for this property.
Туре	java.lang.String	Fully qualified Java type of this property (java.lang.lnteger, java.lang.Byte).

11. Click **OK** to return to the data source configuration window.

12. Click the Test Connection for the new data source. Make sure the connection is successful before continuing.

13. Save the master configuration.

## 4.3.2.2 Setting up data source for WebSphere 8.0

The following section will take one database type (Teradata database with Teradata JDBC driver) as an example to show you how to create a data source for WebSphere, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

## Note:

- 1. The JNDI name specified for the data source will be regarded as the data source name by PowerServer and AEM.
- 2. If the **global security mode** is turned on in WebSphere, AEM will not be able to access the WebSphere data sources. Please refer to <u>Section 4.3.2.3</u>, "Required configurations when global security is on" for solutions.

## 4.3.2.2.1 Creating and configuring a JDBC provider

Step 1: Start the WebSphere Server and log on to the WebSphere Server Console.

Step 2: Click **Resources** > **JDBC** > **JDBC** providers. In the right pane, select the appropriate scope for the JDBC provider. (This scope becomes the scope of your data source.) You can choose a cell, node, cluster, or server. And then click **New**.

## Figure 4.25: JDBC providers page

WebSphere. software			Welcome admin	Help	Logou	t IBM.
View: All tasks	Cell=websp	here8testNode01Cell, Pi	ofile=AppSrv01			Close page
■ Welcome	JDBC prov	iders		?	– Help	
Guided Activities	JDBC	providers			Field	help
Servers	Use th	is page to edit proper	ties of a JDBC provider. The JDBC provider obje	ect encapsulates the	For fit	eld help information, : a field label or list
Applications	enviro task s	nment. Learn more ab	out this task in a <u>guided activity</u> . A guided acti- linformation about the topic	oatabase of your ivity provides a list of	curso	er when the help r is displayed.
Services	E Sco	pe: Cell <b>=websphere8</b>	testNode01Cell, Node=websphere8testNode01	l, Server= <b>server1</b>	Page	help
Resources		Scope specifies the	level at which the resource definition is		More this p	<u>information about</u> age
■ Schedulers		visible. For detailed	information on what scope is and how it esettings below		Comn	nand Assistance
Object pool managers		Nodo=wohcoho	<u>View a</u> script	<u>administrative</u> ing_command_for		
⊞ JMS		[Hode=webspile)			last a	<u>ction</u>
□ JDBC	🕀 Pre	ferences				
JDBC providers	New	Delete				
Data sources						
<ul> <li>Data sources (WebSphe Application Server V4)</li> </ul>						
	Select	Name 🗘	Scope 🗘	Description 🗘		
■ Resource Adapters	You d	an administer the foll	owing resources:			
■ Asynchronous beans ■ Cache instances		Derby JDBC Provider	Node=websphere8testNode01,Server=server1	Derby embedded non-XA JDBC Provider		
. ■ Mail	Total	1				
I URL						
■ Resource Environment						

Step 3: On the Create new JDBC provider page, enter or select the following information, and then click **Next**.

Figure 4.26: Create new JDBC provider page

WebSphere. software		Welcome admin	Help Logout	IBM.
View: All tasks	Cell=websphere8testNode01Cell,	Profile=AppSrv01		Close page
■ Welcome	Create a new JDBC Provider			Help
Guided Activities				Field help
Servers	Create a new JDBC Provide	ir		The requir
Applications	→ Step 1: Create new JDBC provider	Create new JDBC provider		
Services	Step 2: Enter	Set the basic configuration values of a JDBC provider specific vendor JDBC driver implementation classes t	, which encapsulates the hat are required to access the	
🗆 Resources	database class path information	database. The wizard fills in the name and the descr different values.	iption fields, but you can type	
<ul> <li>Schedulers</li> <li>Object pool managers</li> <li>JMS</li> <li>JDBC</li> <li>JDBC providers</li> <li>Data sources</li> <li>Data sources (WebSpher Application Server V4)</li> <li>Resource Adapters</li> <li>Asynchronous beans</li> <li>Cache instances</li> <li>Mail</li> <li>High</li> </ul>	Step 3: Summary	Scope cells:websphereStestNode01Cell:nodes:websphereS • Database type User-defined • • Implementation dass name a.jdbc.TeraConnectionPoolDataSource • Name Teradata Driver Description Tteradata Driver	ttestNode01;servers;server1	
Resource Environment	Next Cancel			
Security				
Environment				
■ System administration <				

Fill in details as required in the table below.

Table 4.8: Create new JDBC provider

Field	Description	Value
Database type	Select the database type of the JDBC provider	User-defined
	you need to create from the drop-down list.	

Field	Description	Value
	Note: If the list of database types does not include the database type that you want to use, select "User-defined".	
Implementation classname	Enter the name of the connection pool driver of the database specified.	com.teradata.jdbc.TeraC onnectionPoolDataSource
Name	Enter a desired new JDBC provider name.	Teradata Driver
Description	Enter the description that you like to describe your new JDBC provider.	Teradata Driver

Step 4: On the Enter database class path information page, enter the database class path, and then click **Next**.

WebSphere. software				Welcome admin	Help	L	ogout	IBM.
View: All tasks	Cell=we	bsphere8testNode01Cel	l, Profile=AppSrv01				с	lose page
■ Welcome	Create	a new JDBC Provider					Help	
Guided Activities							Field help	,
Gervers	Cre	ate a new JDBC Provid	ler				A list of p names th	aths or JAR file at, together,
Applications		Step 1: Create new JDBC provider	Enter database class pat	h information			form the resource	location for the provider classe:
Services	$\rightarrow$	Step 2: Enter	To configure your us names of the JDBC of	er-defined JDBC provider, specify t river class files that you installed.	he full path Type the file			
□ Resources		information	displayed in the field	alues of the WebSphere(R) variabl I. Do not use path separator charac	es that are ters (such as			
Schedulers			')' or ': '). Use Enter	to separate your class path entries	•			
Object pool managers			Class path					
			C:\teradatajdbc\te C:\teradatajdbc\td	rajdbc4.jar gssconfig.jar				
= JDBC providers								
<ul> <li>Data sources</li> </ul>								
Data sources (WebSpher								
Application Server V4)								
Resource Adapters		waviewa Neut						
Asynchronous beans		revious Next Ca	incer					
Cache Instances     Mol								
■ Resource Environment								
■ Security								
Environment								
System administration								
System administration								

Fill in details as required in the table below.

Table 4.9: Database class	path information
---------------------------	------------------

Field	Description	Value
Class path	The full name of the jar files that make up	C:\teradatajdbc\terajdbc4.jar
	the Teradata JDBC Driver. The example	C:\teradataidbc\tdgssconfig.iar
	assumes that you have copied these files to	er (teruautujuse (tagssestinig.jur
	the C:\teradatajdbc directory on your system.	
	A path on a Unix machine would use forward	
	slashes to separate its components.	

Step 5: On the Summary page, you can review the settings and when done click Finish.

## Figure 4.28: Summary page

WebSphere. software			Welcome admin	Help	Logout	IBM.
View: All tasks	Cell=websphere8testNode01Cell, P	rofile=AppSrv01				Close page
■ Welcome	Create a new JDBC Provider					E
Guided Activities						
■ Servers	Create a new JDBC Provider					
Applications	Step 1: Create new JDBC provider	Summary				
	Step 2: Enter	Summary of act	ions:			
Resources	database class path information	Options	Values			
	→ Step 3: Summary	Scope	cells:websphere8testNode01Cell:n	odes:websphere8	testNode01:se	/vers:server1
<ul> <li>Object pool managers</li> </ul>		name	Teradata Driver			
∎ IMS		Description	Tteradata Driver			
■ JDBC		Class path	C:\teradatajdbc\terajdbc4.jar C:\te	radatajdbc\tdgss	config.jar	
JDBC providers		Implementation class name	com.teradata.jdbc.TeraConnectionI	PoolDataSource		
Data sources						
<ul> <li>Data sources (WebSpher Application Server V4)</li> </ul>	Previous Finish Car	ncel				
■ Resource Adapters						
■ Asynchronous beans						
■ Cache instances						
. ■ Mail						
■ URL						
■ Resource Environment						
Security						
Environment						
■ System administration ■						

Step 6: On the JDBC providers page, click **Save** to commit these changes to the master configuration and have them go live inside of the server.

WebSphere. software		Welcome admir	n Help	Logout	IBM		
View: All tasks	JDBC providers		? -	1			
■ Welcome	🗆 Messages			Help			
Guided Activities	⚠ Changes ● Save di	have been made to your local configuration. Yo	ou can:	Field help			
Servers	• Review	changes before saving or discarding.		For field help information select a field label or li:			
Applications	Charles effect.	ver may need to be restarted for these changes	s to take	marker when t cursor is displa	he help iyed.		
Services				Page help			
🗆 Resources	JDBC providers			More informati this page	on about		
■ Schedulers	Use this page to edit prope specific JDBC driver implem	rties of a JDBC provider. The JDBC provider obje entation class for access to the specific vendor o	ct encapsulates the latabase of your	Command Ass	istance		
Object pool managers	environment. Learn more a task steps and more gener	nvironment. Learn more about this task in a <u>quided activity</u> . A guided activity provides a list of ask steps and more general information about the topic.					
⊞ JMS	Scope: Cell=websphere	] Scope: Cell=websphere8testNode01Cell, Node=websphere8testNode01, Server=server1					
■ JDBC ■ JDBC providers	Scope specifies th visible. For detaile works, <u>see the sco</u>	e level at which the resource definition is d information on what scope is and how it <u>pe settings help.</u>					
Data sources	Node=websphe	Node=websphere8tectNode01, Server=server1					
Application Server V4)	Preferences						
■ Resource Adapters	New Delete						
Asynchronous beans							
		1					
	Select Name 🗘	Select Name 🗘 Scope 🗘 Description 🗘					
Besource Environment	You can administer the fol	owing resources:	Derby embedded				
		nost accophereotesthodeotjoerver-servert	non-XA JDBC Provider				
Security	Teradata Driver	Node=websphere8testNode01,Server=server1	Tteradata Driver				
Environment							
System administration	Total 2						

Figure 4.29: JDBC providers page

Now the "Teradata Driver" appears in the list of JDBC providers.

#### Figure 4.30: The newly created JDBC providers page



#### 4.3.2.2.2 Creating the Data Source

Step 1: Start the WebSphere Server and log on to the WebSphere Server Console.

Step 2: Click **Resources** > **JDBC** > **Data sources**. In the right pane, select appropriate scope for the data source. (This scope becomes the scope of your data source.) You can choose a cell, node, cluster, or server. And then click **New**.

Figure 4.31: Create the Data Source page

WebSphere, software				Welcome admin	Help	Logout	IBM.
View: All tasks	Cell=websp	here8testNode01C	ell, Profile=AppSrv01				Close page
Welcome	Data sour	ces					?
Guided Activities	Data s	ources					
Servers	Use th	is page to edit th	e settings of a data	source that is associated with your selected JD	BC provider. T	he datasource (	object supplies
■ Applications	your a provid	pplication with col es a list of task s	teps and more gene	ng the database. Learn more about this task ral information about the topic.	in a <u>quided a</u>	<u>tivity</u> . A guided	activity
Services	🖃 Sco	pe: Cell <b>=websph</b>	ere8testNode01Cell	, Node=websphere8testNode01, Server=serve	er1		
□ Resources		Scope specifie	is the level at which i	the resource definition is visible. For detailed i	nformation		
<ul><li>Schedulers</li><li>Object pool managers</li></ul>		Node=web:	sphere8testNode01,	Server=server1 •			
⊞ JMS	🛨 Pre	ferences					
□ JDBC	New	Delete	Test connection	Manage state			
= Data sources		6 # 7					
■ Data sources (WebSpher	Select	Name 🛟	JNDI name 🗘	Scope 🗘	Provider 🗘	Description 🗘	Category 🗘
Application Server V4)	You d	an administer the	e following resources				
<ul> <li>Resource Adapters</li> <li>Asynchronous beans</li> <li>Cache instances</li> </ul>		<u>Default</u> <u>Datasource</u>	DefaultDatasource	Node=websphere8testNode01,Server=server1	L Derby JDBC Provider	Datasource for the WebSphere Default Application	
	Total	1					
■ URL							
Resource Environment							
Security							
■ Environment							
System administration							_

Step 3: On the Enter basic data source information page, enter the following information. And then click **Next.** 





Fill in details as required in the table below.

Table 4.10: The basic Data Source information

Field	Description	Value
Data Source Name	Enter a desired new JDBC data source name.	testTeradataJdbcDS
JNDI Name	Enter a JNDI name that you like to assign to your new JDBC Data Source.	testTeradataJdbcDS

## Note:

- The JNDI name specified for the data source will be regarded as the data source name by PowerServer and AEM.
- If the **global security mode** is turned on in WebSphere, AEM will not be able to access the WebSphere data sources. Please refer to <u>Section 4.3.2.3</u>, "<u>Required configurations when</u> <u>global security is on</u>" for solutions.

Step 4: On the **Select JDBC provider** page, click **Select an existing JDBC provider** and select **Teradata Driver** from the drop-down list. And then click **Next**.

Figure 4.33: Select JDBC provider page



Step 5: On the Enter database specific properties for the data source page, click Next.

Figure 4.34: Enter database specific properties for the data source page

webSphere. software		Welcome admin	Help	Logout IBM.
View: All tasks	Cell=websphereStestNode01Cell	, Profile=AppSrvO1		Close page
■ Welcome	Create a data source			. Help
Guided Activities	Create a data source			Field help For field help information,
Applications	Step 1: Enter basic data source information	Enter database specific properties for the data source		select a field label or list marker when the help cursor is displayed.
Gervices	Step 2: Select IDBC	For your user-defined datasource, specify the properties	that are	
Resources	provider	required by the database vendor JDBC driver. If the wiza not prompt you for all of the necessary properties, config	rd page does	
<ul> <li>■ Schedulers</li> <li>■ Object pool managers</li> <li>■ JMS</li> <li>■ JDBC</li> <li>■ JDBC providers</li> <li>■ Data sources</li> <li>■ Data sources (WebSpher Application Server V4)</li> </ul>	→ Step 3: Enter database specific properties for the data source Step 4: Setup security allases Step 5: Summary	later as custom properties in the administrative console. datastore helper class field generally displays a default appropriate for your driver type. However, for some drive installations, WebSphere(R) Application Server supplies generic datastore helper class name. You must type a sj Otherwise, set the datastore helper dass after you exit to to the settings page for the new datasource in the admin console. * Data store helper class name [com.ibm.websphere.rsadapter.GenericDataStoreHelper Use this data source in container managed persiste	The The value that is r conly a pecific value. he wizard; go histrative	
Resource Adapters  Asynchronous beans  Cache instances  Mail  URL  Resource Environment  Security  Cache instances	Previous Next Ca	ncel		
System administration				

Fill in details as required in the table below.

Table 4.11: Database specific properties for the data source

Field	Description	Value
Data store helper class name	Data store helper classes provided by WebSphere.	Select the default value "com.ibm.websphere.rsadapte r.GenericDataStoreHelper".

Field	Description	Value
Container Managed	Set if Data Source is used for	Check this box if the Data
Persistence	CMP of EJBs.	Source is used with CMP
		entity beans. Otherwise, leave
		it unchecked.

Step 6: On the **Setup security aliases** page, keep the default values as "none", and then click **Next.** 

Figure 4.35:	Setup	security	aliases	page
--------------	-------	----------	---------	------

WebSphere. software		Welcome admin	Help	Logout	IBM.
Services	Cell=websphere8testNode01Cel	ll, Profile=AppSrv01		Clos	e page
□ Resources	Create a data source		E B	lelp	
Schedulers				Field help	
■ Object pool managers ■ JMS	Create a data source Step 1: Enter basic	Setup security aliases		For field help informa select a field label or marker when the help	tion, list
<ul> <li>□ JDBC</li> <li>□ JDBC providers</li> <li>□ Data sources</li> <li>□ Data sources (WebSpher Application Server V4)</li> <li>□ Resource Adapters</li> <li>□ Asynchronous beans</li> <li>□ Cache instances</li> <li>□ Mail</li> <li>□ URL</li> </ul>	<ul> <li>Gate Source information</li> <li>Step 2: Select JDBC provider</li> <li>Step 3: Enter database specific properties for the data source</li> <li>→ Step 4: Setup security aliases</li> <li>Step 5: Summary</li> </ul>	Select the authentication values for this resource. Component-managed authentication alias (none) Container-managed authentication alias (none) Container-managed authentication alias (none) Note: You can create a new J2C authentication alias by accessing one of the following links. Clicking on a link will cancel the wizard and your current wizard selections will be		cursor is displayed.	
Security     Environment		Global J2C authentication alias			
■ System administration	Previous Next Ca	ancel			
Users and Groups					
Monitoring and Tuning					
Troubleshooting					
Service integration					
■ UDDI					

Step 7: On the **Summary** page, you can review the settings and when done click **Finish**.

WebSphere. software			Welcome admin	Help	Logout	IBM.
Services	Create a data source					
Resources	Step 1: Enter basic data source	Summary				
Schedulers	information	Summary of act	ions:			
<ul> <li>Object pool managers</li> </ul>	Step 2: Select JDBC	Options	Values			
⊞ 1MS	provider	Scope	cells:websphere8testNode01Cell:noc	des:websphere	8testNode01:server	s:server1
□ JDBC	Step 3: Enter database specific properties for the	Data source name	testTeradataJdbcDS			
JDBC providers	data source	JNDI name	testTeradataJdbcDS			
Data sources	Step 4: Setup	Select an existing IDBC	Teradata Driver			
Data sources (WebSpher	security aliases	provider				
Application Server V4)	→ Step 5: Summary	Implementation class name	com.teradata.jdbc.TeraConnectionPo	olDataSource		
Resource Adapters		Data store				
Asynchronous beans		helper class name	com.ibm.websphere.rsadapter.Gene	ricDataStoreHe	lper	
Gacrie instances     Mail		Use this data				
		container	true			
Besource Environment		managed persistence				
		(CMP)				
Security		Component- managed	(2020)			
Environment		authentication alias	(none)			
■ System administration		Mapping-	(none)			
Users and Groups		alias	(none)			
Monitoring and Tuning		Container- managed	(none)			
Troubleshooting		authentication alias	(10112)			
Service integration	Durations Field	-				
± UDDI	Previous Finish Car	icei				

Figure 4.36: Summary page

Step 8: On the **Data Sources** page, click **Save** to commit these changes to the master configuration and have them go live inside of the server.

Figure 4.	87: Data	Sources	page
-----------	----------	---------	------

WebSphere. software				Welcome admin	Help	Logout	IBM
E Services	Data sources						?
🗆 Resources		- Messar	105				
Schedulers		∆ Cha	anges have been mad	de to your local configuration. You can:			
Object pool manage		<ul> <li><u>Save</u> directly to the master configuration.</li> </ul>					
. ∎ JMS		<u>∆</u> -⊤⊦	he server may need to	o be restarted for these changes to take effect			
■ JDBC							
JDBC providers	Data sourc	:es					
Data sources	Use this pa	age to edit the se	ttings of a datasource	e that is associated with your selected JDBC pro	vider. The dataso	urce object supp	plies your
Data sources (W)	application with connections for accessing the database. Learn more about this task in a <u>quided activity</u> . A guided activity provides a list of task steps and more general information about the topic.						
Application Serve	Scope: Cell=websphere8testNode01Cell, Node=websphere8testNode01, Server=server1						
■ Resource Adapters		cono coocifios the	a lough at which the re	course definition is visible. For detailed inform	ation on what		
Asynchronous beans	s	cope is and how i	t works, <u>see the scop</u>	e settings help.	acioni on what		
🗉 Cache instances		Node=websphe	re8testNode01, Serve	r=server1 •			
■ Mail							
■ URL	Preferen	nces					
■ Resource Environment	New	Delete Test	t connection M	lanage state			
⊞ Security		+++) +					
Environment	Select Na	me 🗘	JNDI name 🗘	Scope 🗘	Provider 🗘	Description 🗘	Category 🗘
■ System administration	You can a	administer the foll	owing resources:				
∎ Users and Groups		fault Datasource	DefaultDatasource	Node=websphere8testNode01,Server=server1	Derby JDBC Provider	Datasource for the	
Monitoring and Tuning						WebSphere Default Application	
		tTeradataJdbcDS	testTeradataJdbcDS	Node=websphere8testNode01,Server=server1	Teradata Driver	New JDBC	
Service integration						Datasource	
🗉 UDDI 📃	Total 2						

Step 9: On the following page, click testTeradataJdbcDS in the Data Sources window.

Figure 4.38: The newly created data source information page

WebSphere. software			Welcome admin	Help	Logout	IBM.
Services	Cell=websphere8testNode0	D1Cell, Profile=AppSrv01				Close page
🗆 Resources	Data sources					?
<ul> <li>Schedulers</li> <li>Object pool manage</li> <li>B JMS</li> <li>■ JDBC</li> <li>■ JDBC providers</li> <li>■ Data sources</li> <li>■ Data sources (W Application Serve</li> </ul>	Data sources Use this page to edi application with conr steps and more gen Goge: Cell=web Scope: Cell=web scope is ar	It the settings of a datasou ections for accessing the c real information about the <b>sphere8testNode01Cell</b> , N cifies the level at which the ad how it works, <u>see the sc</u> rebsphere8testNode01, Ser	rce that is associated with your selected JDBC pr atabase. Learn more about this task in a <u>guidec</u> ide= <b>websphere8testNode01</b> , Server= <b>server1</b> resource definition is visible. For detailed inform upp settings help. var=server1 <b>x</b>	ovider. The datasc <u>activity</u> . A guided ation on what	ource object supp l activity provide	olies your s a list of task
<ul> <li>Resource Adapters</li> <li>Asynchronous beans</li> <li>Cache instances</li> <li>Mail</li> </ul>	Preferences New Delete	Test connection	Manage state			
• URL	Select Name 🛟	JNDI name 🗘	Scope 🗘	Provider 🗘	Description 🗘	Category 🗘
Resource Environment	You can administer	the following resources:				
Security     Environment	Default Data	<u>source</u> DefaultDatasource	Node=websphere8testNode01,Server=server1	Derby JDBC Provider	Datasource for the WebSphere Default Application	
System administration	testTeradata	JdbcDS testTeradataJdbc	Node=websphere8testNode01,Server=server1	Teradata Driver	New JDBC Datasource	
■ Monitoring and Tuning	Total 2					
■ Troubleshooting						
Service integration						
■ UDDI					_	

Step 10: On the following page, click the link to Custom properties in the Additional Properties of the data source configuration window.

## Figure 4.39: The details of the newly created data source information page

5	Test connection
Applications	
± Services	General Properties
Resources  Schedulers  Object pool managers  JDBC  JDBC  JDBC  JDBC  Data sources  Data sources  Asynchronous beans  Cache instances  Maintain  URL  Cache and	Scope     Cells:vebsphere&testNode01Cellinodes:vebsphere&testNode01:servers:server1     Provider     Teradata Driver     Name     kestTeradataJdbcDS     JNDI name     testTeradataJdbcDS     Use this data source in container managed persistance (CMP)     Description     New JDBC Datasource
Security	
Environment	Category
± System administration	
± Users and Groups	Data store helper class name
± Monitoring and Tuning	Select a data store helper class
± Troubleshocting	Data store helper classes provided by WebSphere Application Server
± Service integration	Generic data store helper

Step 11: On the Custom properties page, specify the Custom properties and click Save.

Figure 4.40: Custom properties page

WebSphere. software				Welcome admin	Help	Logout	IBM.
View: All tasks	Cell=websp	hereStestNodeO1Cell, Profile=AppSrvO1					Close page
Welcome	Data sour	rces					
Guided Activities							
Servers	Data s	<u>sources</u> > <u>testTeradataJdbcDS</u> > Custom pro-	o <b>perties</b> ur enternri	se information system (FIS) requi	ires for the reso	urce providers ap	d resource fac
Applications	requir	e additional custom properties for data sourc	es that ac	cess the database.			
Services	+ Pre	ferences					
Resources	New	Delete					
Schedulers		6 # \$					
Object pool manage	Select	Name 🗘	Value 🗘	Description 🗘			
⊞ JMS	You	can administer the following resources:					
■ JDBC ■ JDBC providers		freeResourcesOnClose	false	Controls whether or not the appl Readers when the object that cre the free (or close) method.	lication server au eated them is cl	utomatically frees osed. The ability	: Arrays, Blobs to free resour
■ Data sources ■ Data sources (\\ Application Serv		<u>userDefinedErrorMap</u>		Overlays existing entries in the used to add, change, or remove and value, where the key is an o are separated by = (equals sign to DuplicateKeyException, and a	error map by inu entries from th error code (num ). For example, add a mapping o	oking DataStore e error map. Entr eric value) or SQI to remove the m f SQLState 08004	Helper.setUser ies are delimit State (text er apping of SQI to StaleConr
Resource Adapters     Asynchronous beans				userDefinedErrorMap: "S1000"=;1062=com.ibm.websp	here.ce.cm.Dup	licateKeyE×ceptio	n;"08004"=co
Cache instances		beginTranForResultSetScrollingAPIs	false	If beginTranForResultSetScrollin when the connection is not curre	gAPIs is enabled ntly enlisted in a	d, the application a transaction and	server attem; a result set s
		beginTranForVendorAPIs	false	If beginTranForVendorAPIs is er connection is not currently enlist WSCallHelper,jdbcCall or WSCall	abled, the appli ted in a transacti Helper.jdbcPass	cation server atte on and a vendor	empts to begir API is invoke
Resource Environment     Security		<u>connectionSharing</u>	1	Determines whether connections (0). To specify with greater gran the following constants by addin	are shared bas ularity which con	ed on the current nection propertie	t state of the c s are matched
# Environment				16=catalog.	y alem together		constront revely
		syncQueryTimeoutWithTransactionTimeout		Use the time remaining (if any)	in a JTA transac	tion as the defau	ult query timec
System administration	•	webSnhereDefaultIsolationLevel		Specifies a default transaction is	solation level for	new connections	. Resource Re

Fill in details as required in the table below.

**Table 4.12: Custom properties** 

Name	Description	Value
DSName	Enter a host name or IP address of the database	192.0.2.54
	server.	

Name	Description	Value
USER	Enter the database account user name that you want to use to create the database connections.	DBC
PASSWORD	Enter the database account password that you want to use to create the database connections.	DBC
CHARSET	Enter the session character set utilized to map characters bidirectionally from the client application and the Teradata Database.	UTF8
TMODE	Enter the session mode on a Teradata Database V2R2.0 or later system.	ANSI
account	Enter the database account name that you want to use to create the database connections.	DBC

Step 12: Click **Test Connection** for the new data source. A message will display as follows if the data source is successfully created.

#### Figure 4.41: Test the connection for the data source

```
Messages
The test connection operation for data source testTeradataJdbcDS on server server1 at node websphere8testNode01 was successful with 1 warning(s). <u>View JVM logs</u> for further details.
```

#### 4.3.2.3 Required configurations when global security is on

If the global security mode is turned on in WebSphere, AEM will not be able to access the WebSphere data sources. You can perform the following configurations to resolve this problem.

Step 1: Go to the %user.install.root%\properties directory (%user.install.root% indicates the WebSphere instance installation directory, for example, C:\Program Files\IBM\WebSphere \AppServer\profiles\AppSrv01\), open the sas.client.props file in text editor, and modify the following three properties:

- com.ibm.CORBA.loginUserid: set to the WebSphere account username.
- com.ibm.CORBA.loginPassword: set to the WebSphere account password.
- com.ibm.CORBA.securityServerPort: set to the WebSphere IIOP port, if it is not the default port 2809. You can find out and modify this port number by using the BOOTSTRAP\_ADDRESS property in the WebSphere console.

Step 2: Save changes in sas.client.props and then restart WebSphere.

Note: After making the above changes, everytime when a data source is created, you will need to restart WebSphere so the new data source is accessible to AEM.

If the global security mode is turned off, you will need to remove settings of com.ibm.CORBA.loginUserid and com.ibm.CORBA.loginPassword from the sas.client.props file.

## 4.3.3 Setting up data source for JBoss

## 4.3.3.1 Setting up data source for WildFly and JBoss EAP

Data source configuration in WildFly 10 and JBoss EAP 6.x is almost the same. Here we take WildFly as am example to show you how to create the data source. You can find more details in the corresponding JBoss Web sites: <u>Datasource configuration</u> for WildFly, and <u>Datasource management</u> for JBoss EAP 6.4.

The following section will take one database type (SQL Anywhere database with SAP jConnect JDBC driver) as an example to show you how to create a data source for WildFly, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

You need to perform two main tasks to define a data source in WildFly and JBoss EAP. First, you must make the JDBC driver available to the application server; then you need to configure the data source that references the driver you installed.

## 4.3.3.1.1 Installing the JDBC driver

You can install a JDBC driver with the management console or as a Core Module. In this example, we will take the management console approach as an example. If you want to use the Core Module approach, you may refer to the corresponding JBoss documentation.

Step 1: Modify the JAR file of the JDBC driver. Take SAP jConnect JDBC driver as an example.

- 1. Under the same directory as the jconn3.jar file, create a "**META-INF**" subdirectory and a "**META-INF**\services" subdirectory.
- 2. Under the "**META-INF**\services" directory, create a **java.sql.Driver** file which contains one line the fully-qualified class name of the JDBC driver, in this example, **com.sybase.jdbc3.jdbc.SybDriver**.
- 3. Execute the "jar" command to update the JAR file: "jar -uf jconn3.jar META-INF/ services/java.sql.Driver". You can also use WinRAR tool to add the META-INF \services\java.sql.Driver directory and file to jconn3.jar, as shown in the following figure.

📜 jconn3.jar - WinRA	R (evaluation copy)		same on the state of a second such	
<u>File</u> <u>C</u> ommands T	ool <u>s</u> Fav <u>o</u> rites Optio <u>n</u>	<u>n</u> s <u>H</u> elp		
Add Extract To	Test View D	Delete Find Wizard	Info VirusScan Comment SFX	
🗈 🗎 jconn3.j	ar\META-INF\services - Z	IP archive, unpacked size 970	),691 bytes	-
Name	Size Pa	cked Type	Modified CRC32	
 ] java.sql.Driver	31	File folder 29 DRIVER File	10/25/2013 11: 57A7A3B5	
			Total 31 bytes in 1 file	

## Figure 4.42: Modify the JAR file

Step 2: Deploy the modified JAR file.

- 1. Log into the WildFly management console.
- 2. Click **Start** for **Deploy an Application** on the home page.

#### Figure 4.43: Start to deploy the JAR file

♦ ♦ localhost:9990/console/App.html#home							
Wild <b>F</b>	y						
Home	Deployments	Configuration	Runtime	Access Control	Patching		
Wild	Deployment Add and manage Deploy an Appli Deploy an applica 1. Use the 'Add D 2. Enable the dep	S deployments cation Start O tion to the server leployment' wizard to ployment	o deploy the ap	pplication		Configuration Configure subsystem settings ✓ Create a Datasource Start Define a datasource to be used by depl- must be deployed and registered. 1. Select the Datasources subsystem 2. Add a Non-XA or XA datasource 3. Use the 'Create Datasource' wizard t > Create a JMS Queue Start	
** 00 ** 00 ** 00	Runtime Monitor server sta	atus			<u>.</u>	Access Control Manage user and group permissions fo	

3. Click the Add button on the deployment page. The New Deployment wizard starts.

Iocalhost:9990/console/App.html#standalone-deployments								
Wild <b>F</b>	ly							
Home	Deployments	Configuration	Runtime	Access Control	Patching			
Deploym	ent	Add						
Q			Deploym	ent				
appeonn	nobile.war		A deployment re kind of standard	presents anything that archive such as RAR of	at can be deployed (e.g. an applica or JBoss-specific deployment) into			
appeonserver.ear >		>	Common Configuration Tasks Deploy and manage applications and other EE resources.					

Figure 4.44: Add the JAR file

4. In the **New Deployment** Wizard, keep the default option "**Upload a new deployment**" and click **Next**.

## Figure 4.45: New Deployment wizard

New Deployment	2 ×
Please Choose	
Upload a new deployment Use this option to upload a new artifact like a WAR or EAR archive.	
Create an unmanaged deployment An unmanaged deployment points to a folder on the server's local file system. Compared to managed deployments, unmanaged deployments won't be copied (i.e. uploaded) to the server's deployment repository befi- they're deployed. The deployment content will remain at and be deployed directly from its original location. Note: exploded deployments are suppo- only as unmanaged.	ore d rted
Cancel << Back Nex	t >>

5. Click **Browse** to select the modified JAR file and click **Next**.

## Figure 4.46: New Deployment wizard

New Deployment	2	×
Upload Deployment		
Please choose a file that you want to deploy.		
Browse jconn3.jar		
		_
Cancel << Back Nex	d >>	
		//,

6. Verify the deployment settings for the JAR file and click **Finish**.

New Deployment		2	×
Verify Upload	Need He	1-2	
Name *:	jconn3.jar	] ]	
Runtime Name*:	jconn3.jar	]	
Enable *:			
Required fields are	marked with an asterisk (*).		
	Cancel << Back Finis	h	

7. When deployment is successful, you will be able to see the message "jconn3.jar deployed successfully" and jconn3.jar listed on the deployment page.

Step 3: Wait a few minutes for the JAR file to be detected and listed in the driver list by WildFly or restart WildFly application server to make the JAR file detected and listed immediately.

## 4.3.3.1.2 Configuring the data source

You can configure a data source with the management console or the configuration file. In this example, we will take the management console approach as an example. If you want to use the configuration file approach, you may refer to the corresponding JBoss documentation.

Step 1: On the home page of WildFly management console, click **Start** for **Create a Datasource**.

Figure 4.48: Start to create a new data source

<b>♦</b> → 🥝	localhost:9990/console/App.html#home		$\bigcirc$ $\triangledown$ $\mathcal{C}$ $\bigotimes$ $\neg$ Google $\mathcal{P}$ $\clubsuit$
WildF	V		Messages: 0 🔒 appeon 🗸
Home	Deployments Configuration Runtime Access Control	Patching	
Wild	Deployments Add and manage deployments		Configuration Configure subsystem settings
	Deploy an Application Start      Deploy an application to the server     1. Use the 'Add Deployment' wizard to deploy the application     2. Enable the deployment		Create a Datasource     Start     Define a datasource to be used by deployed applications. The proper JBDC driver must be deployed and registered.     Select the Datasources subsystem     Add a Non-XA or XA datasource     Subsystem     Create a JMS Queue     Start
** [3] ** [3] ** [4]	Runtime Monitor server status	<u>.</u>	Access Control Manage user and group permissions for management operations

Step 2: On the **Configuration** page, select **Subsystems** > **Datasources** > **Non-XA**, and then click **Add**.

Figure 4.49: Start to create a new data source

♦ ⇒ ③ localhost:9990/cons	ole/App.html#	profile/ds-finder				☆ マ C 8 - Google		<del>ک</del> ۱
Wild <b>Fly</b>							Messages: 0 🛔	appeon
Home Deployments	Configura	tion Runtime	Access Control	Patching				
Configuration		Subsystem (28)		Туре		Datasource	Add	
Subsystems	>	JCA		Non-XA	>	ExampleDS		Nc Da
Interfaces		Datasources	>	ХА	>			Man whic
Socket Binding		Resource Adapters	>					whic appl
Paths		Mail	>					tran: data
System Properties		Transactions						
		EJB 3						
		EE						

Step 3: The Create Datasource wizard starts to guide you through creating a data source.

1. Select the data source type. In this example, select Sybase Datasource and click Next.

### Figure 4.50: Select the data source type



2. Input any text as the data source name and the JNDI name. For example, "java:/ appeonsample". Click **Next**.

Note: The JNDI name will be used as the data source name in AEM.

#### Figure 4.51: Specify the data source attributes

Create Datasource						
Step 1/3: Data	asource Attributes					
	Need H	elp?				
Name*:	appeonsample					
JNDI Name *:	java:/appeonsample					
Required fields a	re marked with an asterisk ( *).					

3. Click **Detected Driver**, and then select the JDBC driver, in this example, jconn3.jar. Click **Next**.

« Back

Next >>

//,

If you do not see the driver, make sure you have installed the driver by following instructions in <u>Installing the JDBC driver</u>.

Cancel

#### Figure 4.52: Specify the JDBC driver

Create Datasource

~ ×

## Step 2/3: JDBC Driver

Select one of the installed JDBC driver. Don't see your driver? Please make sure it's deployed as a module and properly registered.

Specify Driver	Detecte	ed Driver				
Name			•			
jconn3.jar						
appeonserve	r.ear_org.l	hsqldb.jdbc.	DBCDrive	r_2_2		
h2						
				<< <	1-3 of 3	> >>



4. Specify the connection information and click Next.

The following table describes how to specify the connection information for SAP SQL Anywhere databases. The values are different according to database types. You can refer to <u>Data source parameters</u>.

Connection URL	For example, jdbc:sybase:Tds:192.0.3.150:2638/appeonsample
Username	Type the database login username. The username is set on the database server.
Password	Type the database login password. The password is set on the database server.

## Figure 4.53: Specify the connection information

Create Datasource	~	×
Create Datasource	~*	×

# Step 3/3: Connection Settings

		Need Help?
	jdbc:sybase:Tds:192.0.3.150:2638/appeonsample	
Connection URL*:		
		.::
	dba	
Username:		
Password:	•••	
Security Domain:		
Required fields are	marked with an asterick ( *)	
nequirea nelas arei		
	Cancel «Back	Next >>

5. Click **Test Connection** to make sure the database can be connected and then click **Finish**.

#### Figure 4.54: Test the database connection

Create Datasource

~ ×

**Test Connection** 

On this page you can test the connection of your datasource.

Test Connection

Cancel	« Back	Finish	
			//,

After the data source is created successfully, you will return to the data source page and you will be able to see the new data source in the list.

	Figure	4.55:	Data	source	list
--	--------	-------	------	--------	------

♦ ♦ localhost:9990/cons	sole/App.html#	profile		⊽ C'	<mark>8</mark> ▼ Google
Wild <b>Fly</b>					
Home Deployments	Configura	tion Runtime Acce	ess Control Patching		
Configuration		Subsystem (28)	Туре	Datasource	Add
Subsystems	>	JCA	Non-XA	> ExampleDS	
Interfaces		Datasources	> XA	> appeonsample	
Socket Binding		Resource Adapters	> =		
Paths		Mail	>		
System Properties		Transactions			
		EID 2			

In JBoss EAP, you may need to manually enable the newly created data source by clicking the **Enable** button on top of the list.

R	RED HAT JBOSS' ENTERPRISE APPLICATION PLATFORM 6.4.0.GA Messages: 1 Red Hat Access V Q Search							🔺 admin 🗸			
F	lome	Deployments	Confi	guration	Runtime	Adn	ministration				
Su	ıbsystem	15	~	DATAS	SOURCES		XA DATASOURCES				
~	Conne JCA Da	tasources		JDBC Dá JDBC dataso	ATASOUICE urce configurat	25 tions.					
Resource Adapters Mail			Available	Datasource	25			Add Re	move	nable	
>	<ul><li>Container</li><li>Core</li></ul>		Name			JNDI			Enabled	?	
> > Gene	Infinis	pan		ExampleD!	S		java:jboss/datasources/Exam	pleDS		*	
	Securi Web	ity		appeonsar	nple		java:/appeonsample			0	
	eneral C	onfiguration		Attributes	Connection		Pool Security Properties	s Validation	X X	1-2 of 2	> >>

## 4.3.4 Setting up data source for NetWeaver

The following section will take one database type (SAP HANA database with HANA JDBC driver) as an example to show you how to create a data source for NetWeaver Application Server, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

Step 1: Log in to SAP NetWeaver Administrator with the URL http://IP:50000/nwa. The IP here is your server's IP address.

Step 2: Click the **Site Map** in the right top of the page to view site map, as shown in the following figure.

Figure	4.57:	View	Site	Map
--------	-------	------	------	-----

207 Home - SAP NetWeaver Admir × +			- 0 ×
← → C 🔇 192.0.0.102:50000/webdynpro/re	sources/sap.com/tc~lm~itsam~ul~mainframe~wd/FloorPlanApp?home	e=brue#	\$ <b>\</b>
🔇 Customize Links 🔇 Appeon Web Library 🔇 New Tab	Options 🔇 192.0.3.117		Dther bookmarks
Log richol	ouvo Archiving Cocopii	Compore dystems	<u> </u>
Java HTTP Provider Contiguration	XML DAS Administration	Distributed Transactions	
Start & Stop	Jobs	System Performance Statistics	
Session Management	Java Scheduler	Database	
Java System Properties	Processes and Tasks	JPA Monitors	
Connectivity Logging & Tracing	Wanage Processes	Open SQL bala Browser	
Sequence Monitoring	Manage Lasks	Open SuL Monitors	
System Performance Statistics	Automation Wizard Administration	Logs and Traces	
Message Monitoring	Configuration	Log Configuration	
System Information	Security	Log Viewer	
Application Manager	Authentication and Single Sign-On	Security Troubleshooting Wizard	
Thread Dump Analysis	Destinations	Processes and Tasks	
Security Troubleshooting Wizard	Identity Management	Business Logs	
Log Configuration	Certificates and Keys	Rules Business Logs	
Open SQL Data Browser	Trusted Systems	Process Troubleshooting	
System Connections	Virus Scan Provider	Advanced Troubleshooting	
Destinations	SSL	Thread Dump Analysis	
Application Communication	Infrastructure	Heap Dump Analysis	
Manage Tasks	Adobe Document Services	SOA	
Process Troubleshooting	Application Modules	Technical Configuration	
JNDI Browser	Application Resources	Destination Template Management	
Compare Systems	Java Configuration Browser	SOA Middleware Global Settings	
Java Configuration Browser	Destinations	Destinations	
Ausilability and Performance	Java HTTP Provider Configuration	Services Registry Management	
System Overview	Internationalization	JCo BEC Provider	
System Overview	Java Class Loader Viewer	System Connections	
Resource Monitoring	ICo REC Provider	Application and Scenario Communication	
-ICo Monitoring	JMS Server Configuration	Single Service Administration	
Locks	licenses	Publication Roles	
Distributed Transactions	Log Coptig retion	Application Communication	
Sustain Performance Statistics	Massana Sarvar	Liser Account Menagement	
Section Management	Service: Renistry Management	Business Scenario Communication	
History Reports	Sti Picto Suppler Configuration	Loss and Teases	
Descess Manifesian	Susteen Information	Connectivity Longing & Tracing	
Process womoffing	System mornauon	connectivity Logging & macing	
wessaye multipling	Java System Properties	Monitorina	
Step 3: Click **Application Resources** in the infrastructure of configuration to configure application resources, as shown in the following figure.

Figure 4.58:	Configure	Application	Resources
--------------	-----------	-------------	-----------

/ 🗠	Applica	ition Resources - SAP N × +				
+	-> 1	C 🔇 192.0.0.102:50000/webdynpro/resources/sap.com/tc~lm~itsam~ui~mainfram	ne~wd/FloorPlanApp?home=true#			\$ <b>3</b>
0	Customi	ze Links 🔇 Appeon Web Library 🔇 New Tab 🛐 Options 🔇 192.0.3.117			🗀 Other	r bookmarks
A	(ppli	cation Resources: Overview		Restore Default View   🖕 Back Forward o	⇔ History∡   Site Map   Help   Lo	g Ott
Fav	rorites∡	Related Links _ Go To _ Support Details			Search for:	Go
Sho	w All F	resources				
Re	eource	liet				
-	Jource					
Cre	sate ivew	Resource  Delete Selected Resource Retresn More Actions	15			M
	State	Resource Name	Resource Type	Owner Name	Owner Type	
F						
		BPMCtxConnectionFactory	JMS Connection Factory Reference	sap.com/tc~bpem~index~ear	Java EE Application	
		BPMMailsQueue	JMS Destination Reference	sap.com/tc~bpem~base~ear	Java EE Application	
		BPMMailsTopic	JMS Destination Reference	sap.com/tc~bpem~base~ear	Java EE Application	
		BPMQueueConnectionFactory	JMS Connection Factory Reference	sap.com/tc~bpem~base~ear	Java EE Application	
		BPMTaskEventConnectionFactory	JMS Connection Factory Reference	sap.com/tc~bpem~tm~ear	Java EE Application	
		BPMTaskEventTopic	JMS Destination Reference	sap.com/tc~bpem~tm~ear	Java EE Application	
	•	BPMUpdateAciGueue	JMS Destination Reference	sap.com/tc~bpem~index~ear	Java EE Application	
		CAFAuditGueue	JMS Destination Reference	sap.com/caf~runtime~ear	Java EE Application	
		CAFAuditGueueConnectionFactory	JMS Connection Factory Reference	sap.com/caf~runtime~ear	Java EE Application	
		CAFNotifTopic	JMS Destination Reference	sap.com/caf~km~ear	Java EE Application	-
Pos	sible St	ates: 🍯 Fully available 🛆 Partly available 🍯 Not Available 🔷 Unknown				
Re	source	Details				
	Jource	o cons				
I+	BI	MCtxConnectionFactory				
150	JMS	Connection Factory Reference				_
30	VC					
	Settings	Properties Aliases				_
	sao comto-bperm-index-ear					
A						
CI	ient iD:					=
De	escription					

Step 4: If it is the first time that you create an SAP HANA database connection in the NetWeaver, you need to deploy the HANA JDBC driver at first.

Click **Create New Resource**, and then select **Deploy New JDBC Driver**. On the page that appears, enter a JDBC driver name in the **JDBC Driver Name** text box. It is required, but you can enter any name, which is only used to identify the type of JDBC drivers. For simplicity, enter "com.sap.db.jdbc.Driver", and then click **Add New Driver File** to select the JDBC driver jar file. Finally, click **Save** to deploy JDBC driver.

Figure 4.59: Deploy New JDBC Driver

20" Application Resources - SAP N × +			
← → C 🔇 192.0.0.102:50000/webdynpro/resources/sap.com/tc~lm~itsam~ul~mainframe~wd/FloorPlanApp?home=true#			<b>公 </b> ~
🔇 Customize Links 🔇 Appeon Web Library 🔇 New Tab 📓 Options 🔇 192.0.3.117			📋 Other bookmarks
Application Resources: Overview	Restore Default View	Galack Forward G History   Ste M	ap   Help   Log Off
Favorites, Related Links, Go To, Support Details		Search for:	Go
Show: All Resources			
New JDBC Driver Creation			E
Save Cancel			
Settings			
JDBC Driver Name: * com sap db jdbc Driver			
Add New Driver File   Remove Selected Driver File			801
rie Name			
The files to display			

Step 5: After the JDBC driver is deployed successfully, click **Create New Resource** and then select **New JDBC Custom DataSource** to create a new database connection. On the page that appears, do the following:

- 1. In the **Database Name** text box, Enter a DataSource name;
- 2. In the **Diver Name** dropdown list box, select the correct **Driver Name**;
- 3. In the **SQL Engine** dropdown list box, select **Vendor SQL**;
- 4. In the Isolation Level dropdown list box, select Default;
- 5. In JDBC Version dropdown list box, select 1x (without XA support);
- 6. In Driver Class Name text box, enter "com.sap.db.jdbc.Driver";
- 7. In **Database URL** text box, enter "jdbc:sap://Host:Port?reconnect=true", for example, enter "jdbc:sap://imdbhdb:30015?reconnect=true".
- 8. In the **User Name** text box, enter the correct user name, and in the **Password** text box, enter the correct password;
- 9. Click **Save** to finish creating a database connection.

Figure 4.60: New JDBC Custom DataSource Creation

227 Application Resources - SAP N × +	
← → C 🔇 192.0.0.102:50000/webdynpro/resources/sap.com/tc~/lm~itsam~ui~mainframe~wd/FloorPlanApp?home=true#	2 A
🔇 Customize Links 🔇 Appeon Web Library 🔇 New Tab 📓 Options 🔇 192.0.3.117	Cther boolmarks
Application Resources: Overview	Restore Default View   💠 Back Forward 📫 History 4   Site Map   Help   Log Off
Favorites, Related Links, Go To, Support Details	Search for:
Show: JDBC Custom DetaSources	
New JDBC Custom DataSource Creation	E
Save Cancel	
Settings Connection Pooling Additional Properties JDBC DataSource Aliases	
Application Name:	
DataSource Name: * MyHana	
Driver Name: * Com.sap.db.jdbc.Driver 👻	
SQL Engine: * Vendor SQL 👻	
Isolation Level: * Default	
JDBC Version: * 1x (without XA support)	
Driver Class Name: * com.sap.db.jdbc.Driver	
Database URL: * jdbc:sap://indbhdb:30015?reconnect=true	
Depresent *	
Description:	

Step 6: To verify whether it is created successfully, select **JDBC Custom DataSource**, and you can see a list of database connections. If the state of the database connection is a green icon, then it indicates that the database connection is created successfully.

### Figure 4.61: Database Connection State

🖉 🖅 Applio	🖅 Application Resources - SAP N × 😨				
€ ⇒	← → C 💿 192.00.102:50000/webdynpro/resources/sap.com/tc~/m~itsam~u/~mainframe~wd/FloorPlanApp?home=true#				
Custom	ze Links 🔇 Appeon Web Library 🔇 New Tab 🎴 Options 🔇 192.0.3.117			Dther bookmarks	
Appl	ication Resources: Overview		Restore Default View   🗇 Back Forward 🔿 🔣	story_   Site Map   Help   Log Off	
Favorites	Related Links _ Go To _ Support Details		Searc	h for: Go	
Show: JDE	C Custom DataSources				
Resourc	e List			E	
Create Nev	Resource     Delete Selected Resource     Refresh More Actions				
State	Resource Name	Resource Type	Owner Name	Owner Type	
æ					
•	HSQLJ2EDB	JDBC Custom DataSource	sap.com/JDBCConnector_HSQLJ2EDB.xml	Java EE Application	
<u> </u>	duanxzdatasource	JDBC Custom DataSource	sap.com/duanxzapp	Java EE Application	
	lisongdemo_db	JDBC Custom DataSource	sap.com/JDBCConnector_lisongdemo_db.xml	Java EE Application	
	salesdemo_db	JDBC Custom DataSource	sap.com/JDBCConnector_salesdemo_db.xml	Java EE Application	
	sapdemo_db	JDBC Custom DataSource	sap.com/JDBCConnector_sapdemo_db.xml	Java EE Application	
Possible S	.ates: 📋 Fully available 🛆 Partly available 🁰 Not Available 🔷 Unknown				
Resourc	9 Details				
I>	- <mark>sapdemo_db</mark>				
JDBC	JDBC Custom DataSource				
Save					
Settings Connection Pooling Y Additional Properties Y JOBC Driver Y DataSource Aliases					
Driver Name: * com.sop.db.jdbc.Driver					
SOL Engine * Vendor SOL v					
Isolation L	evel: * Default				
JDBC Ver	ADBC Version (1x (without XA support)				

# 4.3.5 Setting up data source for JEUS

The following section will take one database type (Oracle database with Oracle JDBC driver) as an example to show you how to create a data source for JEUS, you can later create data sources for other database types by taking the same steps below but specifying different parameters according to <u>Data source parameters</u>.

Detailed steps are as below:

Step 1: Start JEUS and log on to the JEUS Manager.

Step 2: Click the node name: **JEUS Manager Resources** > **JDBC** in the JEUS Node Tree.

Step 3: Click Creating a new JDBC DataSource.



### Figure 4.62: JDBC DataSource page

Step 4: In the **DBMS** dropdown list box, select **Oracle**, and in the **DataSources Available** list box, select **Oracle LocalXADataSource -- Thin**.





You must select LocalXADataSource or XADataSource. LocalXADataSource is preferable to XADataSource because it improves the application performance. For SQL Anywhere databases, you can only select LocalXADataSource. Following are the recommended datasources for different database drivers:

- MS SQL Server 2000 JDBC driver: MS-SQ LocalXADataSource
- MS SQL Server 2005 JDBC driver: Custom DataSource
- jTDS/IBM JDBC Driver: BlackBox LocalXADataSource
- Oracle JDBC driver: Oracle LocalXADataSource -- Thin, or Oracle XADataSource -- Thin
- jConnect: SAP jConnect 5.5 LocalXADataSource

Step 5: Specify the datasource properties and click Next twice.

🚰 JEUS 웹 관리자 - Microsoft Internet Explorer			. 8 ×
Ele Edit Yew Favorites Lools Help			2
🛛 🔾 Back 🔹 🕤 👻 😰 🐔 🔎 Search 👷 Fi	avorkes 🕙 🎰 - 🦕 🕲 - 🖵 🕲 👯		
Address a http://localhost:9744/webadmin/app?servi	se=home 🗾 🛃 Go	Links * COSnagit	св <sup>2</sup>
JEUS Cluster      JEUS Node Tree      testlisong      Tree      testlisong      testlison	evence 이 Caracterest 이 Caracterest 이 Database Name * Oracterest 이 Database의 이름. Oracte은 database의 SID. Network Protocol Database와 연결에 사용되는 프로토콜을 나타낸다. Port Number * 1521 Database listener의 포트번호. Server Name * 192.00.91 Database가 실행되는 곳의 서비이름. User * @ba DB 사용자 ID로 transaction 처리등을 위해서는 출분한 system 특권을 가지고 있어야 한다. Password * plain * ••••• DB 사용자의 password이다. Statement 객체에 지정 될 statement query timeout 를 지정한다. (msec) Additional Properties Description DataSource에 대한 설명을 할수 있는 element이다.	Neut >	
			×
<b>6</b>		Local intraniet	

Figure 4.64: Datasource properties page

The following table lists instructions for how to specify the properties for a datasource.

Table 4.14: Datasource properti	es
---------------------------------	----

Export Name	Input any text as the datasource name. For example, "oracle_datasource1". This name will be recognized as the data source name in AEM.
Database Name	Type the database name. For example, "oracletest01".
Port Number	Type the database port. The default port is 1521.
Server Name	Type the database server name. For example, 192.0.0.91.
User Name	Type the database login username. The username is set on the database server.
Password	Type the database login password. The password is set on the database server. If the password has no effect in the Password field, input "password=password" to the Additional Properties box.

Step 6: Click **Create** and ensure that the JDBC data source is successfully created.

### Figure 4.65: Create a new JDBC DataSource page



A message pops up if the JDBC data source is successfully created.

#### Figure 4.66: Datasource successfully created



### 4.3.6 Data source parameters

The main two requirements for data source configuration are: (1) the driver must be JDBC type; (2) the data source must connect to the database used by the application. The settings discussed in this section focus on meeting these two requirements. Configure the other data source parameters that are not mentioned here based on your own knowledge about data source configuration or simply use the default settings.

Unless specified, the settings given in this chapter apply to the following application servers that Appeon supports: WebLogic, WebSphere, JBoss, JEUS, and NetWeaver.

Note that the values of driver class name and Database URL are case sensitive.

### 4.3.6.1 Data source parameters for SAP SQL Anywhere

SAP SQL Anywhere databases support jConnect (recommended), iAnywhere JDBC-ODBC, and Sun JDBC-ODBC bridge. jConnect is preferable than iAnywhere JDBC-ODBC and Sun JDBC-ODBC bridge because it delivers much better performance at runtime. However, the Appeon Demo uses the Sun JDBC-ODBC bridge because this driver can be automatically configured by the Appeon installation program.

Note:

1) WebSphere server and JEUS server do not support JDBC-ODBC bridge driver, and supports only jConnect driver.

2) To use jConnect to connect with SQL Anywhere, you must start SQL Anywhere as service before configuration.

3) jConnect 6.0 is preferable to jConnect 5.5.

Driver	Parameter	Value	Note
jConnect JDBC driver (Recommende	Driver class name d)	For JConnect 5.5: com.sybase.jdbc2.jdbc.SybDriver For JConnect 6.0: com.sybase.jdbc3.jdbc.SybDriver	Hostname stands for the database server name
iAnywhere JDBC-ODBC driver	Database URL Driver class name Database	jdbc:sybase:Tds:Hostname:Port/ ServiceName For JDBC 2.0: ianywhere.ml.jdbcodbc.IDriver For JDBC 3.0: ianywhere.ml.jdbcodbc.jdbc3.IDriver jdbc:odbc:dsn=DSNname	<i>Port</i> stands for the database server port. The default SQL Anywhere port is 2638.
Sun JDBC- ODBC driver	Driver class name Database URL	sun.jdbc.odbc.JdbcOdbcDriver jdbc:odbc: <i>DSNname</i>	ServiceName stands for the name of the SQL Anywhere database service specified during configuration. DSNname refers to the name of the ODBC DSN that is created for the database.

Table 4.15: Data source parameters for SAP SQL Anywhere

Driver	Parameter	Value	Note
User Name	(Type the datal server.)	base login username. The username is set on the	e database
Password	(Type the datal server.)	base login password. The password is set on the	e database

### 4.3.6.2 Data source parameters for ASE

ASE databases support jConnect JDBC driver only. ASE 15 supports JConnect 6.0 only.

 Table 4.16: Data source parameters for ASE

Parameter	Value	Note
Driver class name	For JConnect 5.5: com.sybase.jdbc2.jdbc.SybDriver	<i>Hostname</i> stands for the database server name or IP address.
	For JConnect 6.0: com.sybase.jdbc3.jdbc.SybDriver	<i>Port</i> stands for the database server port. The default ASE port is 2048.
Database URL	jdbc:sybase:Tds:Hostname:Port/ DBName	<i>DBName</i> stands for the name of the database.
User Name	(Type the database login username. T server.)	The username is set on the database
Password	(Type the database login password. T server.)	The password is set on the database

# 4.3.6.3 Data source parameters for SAP IQ

SAP IQ databases support JConnect JDBC driver or Sun JDBC-ODBC driver.

Table 4.17: Data source parameters for SAP IQ

Driver	Parameter	Value	Note
JConnect JDBC driver (Recomm ended)	Driver class name	For JConnect 5.5: com.sybase.jdbc2.jdbc.SybDriver For JConnect 6: com.sybase.jdbc3.jdbc.SybDriver	<i>Hostname</i> stands for the database server name or IP address. <i>Port</i> stands for the
	Database URL	jdbc:sybase:Tds:Hostname:Port/ ServiceName	database server port. ServiceName stands
Sun JDBC- ODBC driver	Driver class name	sun.jdbc.odbc.JdbcOdbcDriver	for the name of the database service
	Database URL	jdbc:odbc:DSNname	configuration.
			<i>DSNname</i> refers to the name of the
			is created for the database.

Driver	Parameter	Value	Note
User Name	(Type the data server.)	base login user	name. The username is set on the database
Password	(Type the database login password. The password is set on the database server.)		

### 4.3.6.4 Data source parameters for SAP HANA

SAP HANA databases support SAP In-Memory Database JDBC driver.

Table 4.18: Data source parameters for SAP HANA

Driver	Parameter	Value	Note
SAP In-Driver classMemoryname		com.sap.db.jdbc.Driver	<i>Hostname</i> stands for the database server
Database JDBC driver	Database URL	jdbc:sap://Host:Port?reconnect=true	name or IP address. <i>Port</i> stands for the database server port.
User Name	(Type the database login username. The username is set on the database server.)		
Password	(Type the database login password. The password is set on the database server.)		

### 4.3.6.5 Data source parameters for Microsoft SQL Server

Appeon recommends using jTDS JDBC driver (or WebLogic JDBC driver for WebLogic hosting PowerServer) rather than the Microsoft SQL Server JDBC driver, because it can eliminate memory leak and boost performance.

Driver	Parameter	Value	Note	
jTDS JDBC driver (Recommende	Driver class name	net.sourceforge.jtds.jdbc.Driver	<i>Hostname</i> stands for the database server	
	datasource class	net.sourceforge.jtds.jdbcx.JtdsDataSou	Page or IP address. Port stands for the database server port.	
	Database URL	jdbc:jtds:sqlserver://Hostname: Port/;DatabaseName=DBName; SelectMethod=cursor	The default SQL Server port is 1433. <i>DBName</i> stands	
WebLogic SQL Server JDBC driver (for WebLogic server only)	Driver class name	weblogic.jdbc.sqlserver. SQLServerDriver	for the name of the database to which the	
	Database URL	jdbc:bea:sqlserver://Hostname:Port	data source connects. "SelectMethod=curso must be specified, otherwise errors will occur when inserting data.	

 Table 4.19: Data source parameters for Microsoft SQL Server

Driver	Parameter	Value	Note
Microsoft SQL Server JDBC driver	Driver class name	com.microsoft.jdbc.sqlserver.SQL ServerDriver	
	Database URL	jdbc:sqlserver://Hostname:Port; DatabaseName=DBName; SelectMethod=cursor	
User Name	(Type the database login username. The username is set on the database server.)		
Password	(Type the database login password. The password is set on the database server.)		

### 4.3.6.6 Data source parameters for Oracle

Oracle databases support the Oracle JDBC driver only.

<b>Table 4.20: Da</b>	ta source parame	eters for Oracle
-----------------------	------------------	------------------

Parameter	Value	Note
Driver class name	oracle.jdbc.driver.OracleDriver	Hostname stands for the database
Database URL	jdbc:oracle:thin:@hostname:port:DBName or IP address.	
	for Oracle 9i, 10g, and 11g	<i>Port</i> stands for the database server
	jdbc:oracle:thin:@//hostname:port/ for Oracle 12c	<b>DBN</b> ante default Oracle port is 1521.
		DBName stands for the name of
		the database to which the data
		source connects.
User Name	(Type the database login username. The username is set on the database server.)	
Password	(Type the database login password. The password is set on the database server.)	

# 4.3.6.7 Data source parameters for IBM DB2

IBM DB2 databases support the IBM JDBC driver only.

 Table 4.21: Data source parameters for IBM DB2

Parameter	Value	Note
Driver class name	COM.ibm.db2.jdbc.net.DB2Driver	Hostname stands for the
Database URL	jdbc:db2://Hostname:Port/DBName	database server name or IP address. <i>Port</i> stands for the database server port. The port used by
		JDBC will be different than the one used by db2 client. The

Parameter	Value	Note
		default JDBC port is 6789 while the port used by db2 client is 50000.
		<i>DBName</i> stands for the name of the database to which the data source connects.
User Name	(Type the database login username. The server.)	e username is set on the database
Password	(Type the database login password. The password is set on the database server.)	

### 4.3.6.8 Data source parameters for Informix

Informix databases support the IBM Informix JDBC driver only.

Table 4.22: Data source	parameters for Informix
-------------------------	-------------------------

Parameter	Value	Note	
Driver class name	com.informix.jdbc.IfxDriver	<i>Hostname</i> stands for the name or IP address	
Database URL	jdbc:informix-sqli://Hostname:Port/DBName: informixserver=DBServerName For example: jdbc:informix- sqli://192.0.2.117:1527/ mytestdb:informixserver=ol_s_122005_144417	of the machine hosting the database server. One machine can host several database servers.	
		<i>Port</i> stands for the database server port.	
		<i>DBName</i> stands for the name of the database to which the data source connects.	
		<i>DBServerName</i> stands for the name of the database server.	
User Name	(Type the database login username. The username is set on the database server.)		
Password	(Type the database login password. The password is set on the database server.)		

### 4.3.6.9 Data source parameters for MySQL

MySQL databases support MySQL Connector/J driver. Different servers use different driver class names. See the following table for details.

Application Server	Paramete	Value	Note
JBoss & WebSphere	Driver class name Database URL	com.mysql.jdbc.jdbc2.optional.MysqlXADataSource jdbc:mysql: <i>Hostname:Port/ServiceName</i>	<ul> <li><i>Hostname</i> stands for the database server</li> <li>name or IP address.</li> <li><i>Port</i> stands for the database server port.</li> <li><i>ServiceName</i> stands for the name</li> </ul>
WebLogic	Driver class name	com.mysql.jdbc.Driver	
	Database URL	jdbc:mysql:Hostname:Port/ServiceName	
JEUS	Driver class name	com.mysql.jdbc.jdbc2.optional.MysqlConnection PoolDataSource	
	Database URL	jdbc:mysql:Hostname:Port/ServiceName	of the database service specified during configuration
User Name	(Type the server.)	database login username. The username is set on the data	abase
Password	(Type the database login password. The password is set on the database server.)		

Table 4.23: Data source parameters for MySQL

# 4.3.6.10 Data source parameters for Teradata

Teradata databases support the Teradata JDBC driver only.

 Table 4.24: Data source parameters for Teradata

Parame	Value	Note		
Driver	For WebLogic/JBoss/JEUS:	Hostname stands for the		
class name	com.teradata.jdbc.TeraDriver	database server name or IP address.		
	For WebSphere:	<i>DBPort</i> stands for the database		
	com.teradata.jdbc.TeraConnectionPoolDataSource	server port. The default		
Databasejdbc:teradata://Hostname/DATABASE=DBName,		Teradata port is 1025.		
URL	DBS_PORT=DBPort,TMODE=ANSI,CHARSET=	DBName stands for the name of		
	UTF8	the database to which the data		
		source connects.		
User	(Type the database login username. The username is set on the database server.)			
Name				
Passwor	sword Type the database login password. The password is set on the database server.)			

### 4.3.6.11 Data source parameters for PostgreSQL

PostgreSQL databases support the PostgreSQL JDBC driver only.

Parameter	Value	Note
Driver class name	org.postgresql.Driver	<i>Hostname</i> stands for the database server name or IP address.
Database URL	jdbc:postgresql://Hostname:DBPort/	<b>DBRUME</b> stands for the database server port. The default PostgreSQL port is 5432.
		<i>DBName</i> stands for the name of the database to which the data source connects.
User Name	(Type the database login username. ' server.)	The username is set on the database
Password	(Type the database login password. Tserver.)	The password is set on the database

Table 4.25: Data source parameters for PostgreSQL

# 4.4 Setting up transaction object to data source mapping

The purpose of setting up the mapping is to make sure the configured data source can access the database server for the Appeon Web or mobile application as the replacement of the transaction object in the PowerBuilder application.

Figure 4.67: Map transaction to data source



Once PowerServer data sources are configured, you can set up the transaction object to data source mapping in two different ways:

- Higher priority: Dynamic transaction object to data source mapping via PowerScript.
- Lower priority: Static transaction object to data source mapping in AEM. The mapping in PowerScript has priority over the static mapping in AEM.

Dynamic mapping is of higher priority, meaning that if a transaction object named "SQLCA" is both mapped to data source A via PowerScript and mapped to data source B in AEM, the transaction in effect is mapped to data source A.

Note that if PowerServer is installed to WebLogic, WebSphere, JBoss, NetWeaver Application Server, or JEUS, PowerServer and AEM reads data source JNDI names as data source names.

# 4.4.1 Dynamic transaction object to data source mapping

Transaction object to data source mapping can be dynamically set up or changed by setting or changing the DBMS and DBParm properties of the Transaction object in the application source code.

To set or change the data source dynamically, code the DBParm property of the Transaction object in this format:

```
SQLCA.DBParm="CacheName='ASEDataSource1'"
```

"ASEDataSource1" can be replaced by the name of the data source you want to use for the Transaction object.

To set or change the database type dynamically, code the DBMS property of the Transaction object using this format:

SQLCA.DBMS = "ODB-SYC"

The value of the DBMS property should be set based on the database type; refer to the table below.

Database Type	<b>ODBC Interface</b>	JDBC Interface	<b>OLE Interface</b>	Native Interface
MS SQL Server	ODB-MSS	JDB-MSS	OLE-MSS	MSS
Oracle 8i	ODB-O84	JDB-O84	OLE-O84	O84
Oracle 9i	ODB-O90	JDB-O90	OLE-O90	O90
Oracle 10g/11g	ODB-O10	JDB-O10	OLE-O10	O10
SAP ASE	ODB-SYC	JDB-SYC	OLE-SYC	SYC
SAP SQL Anywhere	ODB-ASA	JDB-ASA	OLE-ASA	-
SAP IQ	ODB-SYI	JDB-SYI	OLE-SYI	-
SAP HANA	ODB-HAN	JDB-HAN	-	-

### Table 4.26: Setting the DBMS property based on the database type

Database Type	<b>ODBC Interface</b>	JDBC Interface	<b>OLE Interface</b>	Native Interface
IBM DB2 UDB	ODB-DB2	JDB-DB2	OLE-DB2	DIR
Informix	ODB-IN9	JDB-IN9	OLE-IN9	IN9
MySQL	ODB-MYS	JDB-MYS	-	-
Teradata	ODB-TER	JDB-TER	-	-
PostgreSQL	ODB-PGS	JDB-PGS	OLE-PGS	PGS
Other	ODB-Oth	JDB-Oth	OLE-Oth	Oth

In the table above:

- The names are not case-sensitive (for example: ODBC is the same as odbc).
- If ODB or ODBC is set as the DBMS property, Appeon will regard the database type as SQL Anywhere. The "odb-asa" and "odb-db2" are Appeon defined values. They can be recognized by Appeon without affecting the running of the PowerBuilder application, because only the first three letters of the DBMS setting are valid in PowerScript syntax.

# 4.4.2 Static transaction object to data source mapping

For an Appeon Web or mobile application, you can set up transaction object to data source mapping in the **Applications** settings in AEM. This is a static way for mapping the Transaction object to the data source. For detailed instructions, refer to <u>Transaction Objects</u>.

# 4.5 Advanced configurations related with database connection

# 4.5.1 Application Security

For typical PowerBuilder applications, security is implemented at two levels: script coded security and database security. After conversion, the Appeon system provides an additional built-in layer of application security on top of PowerBuilder application security. Appeon security is "either-or": the user either has or does not have access to the application.

You can implement security for the deployed Web or mobile applications in many ways. PowerBuilder script-coded security can convert direct to the Web or the mobile, and it provides security for the applications. There are also ways to implement database security in the Web or mobile applications. Finally, you can use the Appeon user/group management system to restrict access to the Appeon applications.

In addition, a way to incorporate the Appeon user/group management for use with the coded security in PowerBuilder applications is discussed in <u>Incorporate Appeon security in</u> <u>PowerBuilder code</u>. You can also implement your own security using other technologies.

# 4.5.1.1 Database security

Depending which user logs into an application, a PowerBuilder application can dynamically change the Transaction properties (user ID and password etc.) and connect to the database with different identities that determine the user privileges to access, read or modify the database tables.

Appeon Web applications and Appeon mobile applications rely on the data sources to interact with the Database Servers. In the Web or mobile application, transaction object to data source mapping can be dynamically set up or changed by setting or changing the DBMS and DBParm properties of the Transaction object in the application source code, or it can be statically set up in AEM database configuration. There is a limitation with data source configuration: the user ID and password of a connection must be pre-configured in AEM or application server console. Due to this limitation, you may want to consider the workarounds introduced in this section to improve the migration of database security in the original application.

### 4.5.1.1.1 Workaround one: Predefined data sources

You can pre-define in AEM or application server console a certain number of data sources that correspond to different security access levels in the database with different user IDs and passwords. When the user logs in, the application decides which transaction object to data source mapping to use for establishing the database connection.

You should set up an equal number of data sources in AEM or application server console that connect to the database with different privileges, and map the data sources dynamically using the Transaction DBParm property to the PowerBuilder Transaction objects. Transaction object to data source mapping can be dynamically set up or changed by setting or changing the DBMS and DBParm properties of the Transaction object in the application source code. See Dynamic transaction object to data source mapping for the details.

### 4.5.1.2 Using INI files for connection security

You can set connection properties for a PowerBuilder application either by assigning values to the properties in the application script or using PowerScript Profile functions to read from an initialization (INI) file. It is recommended by Appeon that you set connection properties by reading from INI files only if your environment meets the following requirements:

• The browser for accessing the application must be cookie-enabled.

Reason: PowerServer Toolkit deploys the INI files as XML to PowerServer. When a Client accesses the deployed application that uses the INI file profiles, a copy of the original XML file is specially created and carries all the profile information of the Client. The cookie on the Client browser enables the Client to read the correct copy of its XML file located on PowerServer.

• Make sure the Windows user account profile on the Client is only used by one user for accessing the application.

Reason: As the Cookie will reside in the Windows user profile cookie directory (for example, C:\Documents and Settings\Administrator\Cookies) any user with full access rights who also uses the Client computer will be able to gain access to another user's application identity.

If the same Windows user account profile will be used by multiple users on the Client, consider using another security method, Database security, as introduced in the <u>Database</u> <u>Security</u> section.

The initialization file should at least consist of the Database section:

```
[Database]
variables and their values
...
```

The following script example assigns connection properties to SQLCA. The database connection information is stored on the Web Server after application deployment; on some network configurations this can leave the database server unsecured:

```
SQLCA.DBMS = "MSS Microsoft SQL Server"
SQLCA.Database = "appeon_test"
SQLCA.ServerName = "192.0.0.246"
SQLCA.LogId = "sa"
SQLCA.AutoCommit = False
...
```

To set the Transaction object to connect to a database, the following script example reads values from App.INI, an initialization file. This method is much more secure in comparison to the preceding script.

```
sqlca.DBMS = ProfileString(App.INI, "database",&
"dbms", "")
sqlca.database = ProfileString(App.INI,&
"database", "database", "")
sqlca.userid = ProfileString(App.INI, "database",&
"userid", "")
sqlca.dbpass = ProfileString(App.INI, "database",&
"dbpass", "")
...
```

# 4.5.2 Appeon security

Appeon security features are set in AEM, the Web application that manages the Appeon system and deployed Web or mobile applications. Appeon security is at the application level and is "either or": the user either has or does not have access to the application. By default, Appeon security is turned off for each deployed application.

When the security for a Web or mobile application is turned on, the Appeon Login dialog box pops up at the beginning of the application startup and prompts the user to enter the user name and password. The user name and password are verified by PowerServer against the authentication schema that can be set in an LDAP server or in Appeon system database. If the user name or password is not correct, the user is not allowed to access the Appeon application.

For more information on using Appeon security features for Appeon Web or Appeon mobile applications, refer to the <u>Server Security</u> section.

### 4.5.2.1 Incorporate Appeon security in PowerBuilder code

If your PowerBuilder application has not coded user name/password verification at application startup that restricts access to the application, you can utilize Appeon's built-in user group management. When the application runs, the user is prompted to enter the Appeon user name and password in the Appeon Login dialog box.

The Appeon user name can be passed to the application so that it can be utilized to implement script coded security features for the application. You can use the of\_getappeonusername function in the Appeon Workarounds PBL to get the Appeon user name. For detailed information, refer to Section 2.3.1, "AppeonExtFuncs Object" in *Workarounds & API Guide*.

### 4.5.2.2 Database auditing

In Client/Server architecture, the database can easily keep track of every logged-in user if you enable the AUDITING option in the database.

Appeon Web applications and Appeon mobile applications run in a three-tier architecture. Each time the Client wants to connect with the database, the call reaches PowerServer first. PowerServer will validate the user ID and password of the call. If the validation passes, PowerServer connects with the Database Server using a unified user ID and password. The user ID and password that the database keeps track of is not the user ID and password that makes the call at the Client.

# 4.5.2.2.1 Re-configuring database auditing functionality

To work around the database auditing functionality, you can also re-configure the auditing information that is saved on the database by adding a new field to it: user ID.

With the Client/Server application, make sure that a combination of user ID and password cannot hold multiple connections with the database at one time.

Add in the necessary code in the Client Server application so that every time the user wants to connect with the database, the call sent to the Database Server includes user ID information. For example, when sending the user ID as a column in the DataWindow or to the Stored Procedure, the user ID information in the call from the client-side will be saved in the user ID field on the Database Server.

# **5 AEM User Guide**

# **5.1 Introduction**

# 5.1.1 Overview

AEM is a Web-based application that is automatically installed with PowerServer to manage the PowerServer and the Appeon deployed applications (including both the Web application and the mobile application).

AEM is designed to manage both single-server installations and multiple-server installations with the same ease and power, and it provides an additional layer of security to the existing security already coded into your PowerBuilder applications. It also allows the administrator to use the built-in Appeon security management system or LDAP security (recommended) to control the access rights at the application level.

All settings configured in AEM are saved to several XML files in the <AppeonHome> \repository\<instancename>\config folder. For example, if PowerServer runs on JBoss, the XML files are saved in the %jboss%\appeon\repository\<instancename>\config folder, where %jboss% stands for the installation path of JBoss on the computer.

# 5.1.2 AEM Tools

AEM contains three sets of tools: Server, Application, and Mobile UI Resizing. After login, you can access each tool from the treeview window on the left.

APPEON® A	ppe	on Enterprise Manager	<b>?</b> Help	Log Out
AEM Console		Welcome	PowerServer Mobile (PB Edition) 2017 Build	1651.00
Welcome         ➡ Server         ➡ Sessions         → Logging         ➡ Resources         → Data Source         → Maintenance         ➡ -License Management         ➡ Server Security         ➡ Application         → Configuration Summary         ➡ Transactions         ➡ Per Features         → Client Features         ➡ Oata Transfer         ➡ Performance         ➡ Oblie App Distribution         ➡ Mobile UR Resizing         ➡ Server Size         ─ Window Size	«	Welcome to Appeon Enterprise         Appeon Enterprise Manager (AE         all Appeon deployed applications         Frequently-Used Tools         Active Sessions         Active Transactions         Logging         Data Source         Transaction Objects         Client Features	e Manager M) provides a comprehensive set of easy-to-use tools for managing the entire Appeon syster s (including both Web and Mobile). Lists the active web sessions for all PowerServers. Lists the active transactions for all PowerServers. Configures the log file settings, including PowerServer log list, log operation mode, and log replacement. Specifies the settings used to connect to the database at runtime. Configures the data sources used by the deployed applications. This configuration must be performed each time a new application is deployed or when the transaction object/data sou changed. Configures various client settings related to the user interface and general user experience application, for example application title, graphic theme, application auto update, run mode, message mode, start and exit behaviors, client storage location.	m and m and rce has of the error
Appeon Enterprise Manager (AEM) provides a comprehensive set of easy-to -use tools for managing the entire Appeon system and all Appeon deployed applications (including both Web and Mobile).				

### Figure 5.1: AEM Console

# 5.1.3 Supported Web browsers

AEM can be viewed on the following Web browsers and versions.

- Microsoft Internet Explorer 10/11
- Google Chrome 35 or later

Considering that Web browsers are usually downward compatible, versions higher than the above listed may also be supported.

If you view your AEM using Web browsers other than those listed above, you may run into errors, such as that UI cannot be displayed properly or some functions may not be available.

# 5.2 Getting started

# 5.2.1 Running PowerServer

PowerServer must be running before you start AEM. If using an PowerServer cluster, AEM should only be used in one server to manage all the servers in the cluster.

Start PowerServer, which means starting the application server (JBoss, JEUS, WebLogic, or WebSphere) that PowerServer is installed to.

For example, if PowerServer is installed to JBoss, you can start PowerServer with the following method:

In Windows: choose **Programs** > **Appeon PowerServer 2017** > **PowerServer for JBoss** > **Instances** > *InstanceName* > **Start JBoss** from the **Windows Start** menu.

In Unix\Linux: change to the \$jboss/appeon/bin/ folder and run the appeonserverstart.sh file.

# 5.2.2 Starting AEM

### 5.2.2.1 AEM URL

The URL for launching AEM for a given PowerServer is HTTP://HOST\_NAME:PORT/ AEM/ or HTTPS://HOST\_NAME:PORT/AEM/, where HOST\_NAME is the machine name or IP address of the server, and PORT is the HTTP or HTTPs port for the server.

The default ports for JBoss, JEUS, WebLogic, and WebSphere are:

- JBoss: 8080
- JEUS: 8088
- WebLogic: 7001
- WebSphere: 9080

### 5.2.2.2 Three ways to launch AEM

There are three ways to launch AEM:

• Type the AEM URL in any Web browser that is able to connect via HTTP or HTTPS to the Web port of the PowerServer.

- On the computer where PowerServer is installed, select **Programs** > **Appeon** > **PowerServer** > **Appeon Enterprise Manager** from the **Windows Start** menu.
- On the computer where PowerServer Toolkit is installed, click the **AEM** button (<sup>(i)</sup>) in the PowerServer Toolkit. Before doing this, ensure that the AEM URL has been configured correctly in PowerServer Toolkit.

### 5.2.2.3 AEM user name and password

Enter a valid user name and password for AEM. During the PowerServer installation, you can specify the user name and password. If you did not specify the user name and password during the installation, you can use the default user name and password (both "admin") to log in to AEM. For security purposes, Appeon recommends that you change the user name and password after the initial login. Refer to <u>AEM Login</u> for more information about changing the user name and password.

### 5.2.2.4 Installing Appeon Workspace

If you click the link on the AEM login page, the Appeon Workspace download center (http://*server\_ip\_address*/aws/) will display and allow you to download the built-in version of Appeon Workspace from there.

If you are a server administrator, it is highly recommended that you read through Chapter 3, *Installing Appeon Workspace* in *Appeon Workspace User Guide* carefully, as it talks about how to prepare and deploy Appeon Workspace to the Web server in great details.

### Figure 5.2: AEM login

User name:	
Password:	
	Logon

### 5.2.2.5 AEM language

AEM supports to display its content in multiple languages, such as English (en/en-us), Japanese (ja), Simplified Chinese (zh-cn) and Traditional Chinese (zh-hk/zh-tw).

The AEM language is determined by the language settings of the Web browser. Take Internet Explorer as an example. Select menu **Tools** > **Internet Options** from Internet Explorer. Click the **Languages** button on the **General** tab. Add the language and move it to the top of the list. For example, if you want to display the AEM contents in simplified Chinese, select **Chinese (PRC)** [**zh-CN**] and move it to the top, as shown in the following figure.

### Figure 5.3: Language settings

Internet Options	? 🛛
Language Preference	x nced
Language Preference Add the languages you use to read websites, listing in order of preference. Only add the ones you need, as some characters can be used to impersonate websites in other languages.	в.
Language:	r .
Chinese (PRC) [zh-CN] Move up	
Move down	
Remove	
<u>A</u> dd	
Prefix and suffix options	EI
Do not add 'www' to the beginning of typed web addresses	
Specify the suffix (for example .net) that should be added to typed web addresses when you press Ctrl + Shift + Enter.	
Suffix:	
OK Cancel	
Colors Languages Fonts Acces	sibility
OK Cancel	Apply

### 5.2.3 AEM Help

On the index page of AEM, the **Help** button provides easy access to AEM Help:

### **Figure 5.4: Help button**

	Appeon Enterprise Manager	() About	? Help	Log Out
--	---------------------------	-------------	-----------	---------

Click the **Help** button, find the topic on the left pane, and view the content on the right pane.

### Figure 5.5: PowerServer Help

APP <mark>E</mark> ON <sup>®</sup>	HOME + APPEON MOBILE + APPEON MOBILE ONLINE HELP +	DOV	VNLOAD PDF
		II SIDEBAR	NEXT ►
CONTENTS Q SEARCH	Table of Contents		^
Appeon Server Configuration Guide for J2EE	Appeon Server Configuration Guide for J2EE Server Configuration Tasks Scope of configurations discussed in this book Configuration stages and tasks Configuration during application deployment Configuration during debugging Configuration during security management Configuration during performance management Configuration during server information management		E

# 5.3 Server

Server is a set of tools for viewing and modifying all the configurable system settings. There are five tools: Sessions, Logging, Resources, Product Activation, and Server Security.

### Figure 5.6: Server

AEM Console		<u>Welcome</u> > Server	
™Welcome ⊟ <u>Server</u>	*	Server	
Legging		Views and modifies all	of the configurable settings on the server.
		Sessions	Contains active sessions, active transactions, deployment sessions, and offline configurations.
		Logging	Configures the log file settings, including Appeon Server log list, log operation mode, and log replacement.
H-Mobile UI Resizing		Resources	Contains cluster server list and settings and other maintenance settings.
		Product Activation	Contains product activation and technical support.
		Server Security	Contains AEM login, user management, group management, system security, and deployment security settings.

# 5.3.1 Sessions

Sessions is a set of tools for viewing and modifying all the sessions and the transactions. There are three tools: Active Sessions, Active Transactions, and Deployment Sessions.

### Figure 5.7: Sessions

AEM Console	Welcome > Server > Sessions				
Server	Sessions				
Logging	Contains active sessions, active transactions, deployment sessions, and offline configurations.				
Resources	Active Sessions Lists the active web sessions for all PowerServers.				
Data Source	Active Transactions Lists the active transactions for all PowerServers.				
Maintenance     License Management     Server Security	Deployment Sessions Lists all the currently active deployment sessions. Each deployment session represents an PowerServer Toolkit machine deploying an application to this PowerServer. You may need to kill a deployment session if it terminates abnormally on the PowerServer Toolkit machine.				

### 5.3.1.1 Active Sessions

The AEM Active Sessions tool helps you manage and monitor all the active sessions and the mobile devices (for mobile apps) in the system.

#### **Figure 5.8: Active Sessions**

V	<u>Welcome</u> > <u>Server</u> > <u>Sessions</u> > Active Sessions								
	Active Sessions								
	Lists the active sessions for all PowerServers.								
View active sessions for: all PowerServers V									
	Session ID         User name         IP Address         Application Name         Server ID         State         Started         Last Accessed         Duration (s)								
	Kill Checked Sessions Refresh								
	Device List (Mobile Only)								
	List devices for all PowerServers.								
View devices for all PowerServers V									
Total: 0 Record(s									
	Session ID User name IP Address Application Name Server ID State Started Last Accessed Duration(s)								
	Kill Checked Sessions Refresh								

### **Figure 5.9: Active Sessions**

V	<u>Welcome</u> > <u>Server</u> > <u>Sessions</u> > Active Sessions									
	Device List (Mobile Only)									
	List d	levices for <i>all</i>	PowerServe	ers.						
	View	devices for	all PowerSe	ervers 🗸						
	Total: 0 Record(s)								DRecord(s)	
Session ID User name IP Address Application Name Server ID State Started Last Accessed Duration								Duration(s)		
	Kill Checked Sessions Refresh									

### 5.3.1.1.1 Viewing active sessions and devices on a PowerServer

#### Viewing active sessions

**Note:** This part is only for Web applications.

By default, the Active Sessions table lists the current active and passive sessions on all PowerServer. If you want to view sessions on a particular PowerServer, select the PowerServer from the **View active sessions for** dropdown list box, and click the **Refresh** button. The dropdown list displays all the servers configured in the <u>Cluster</u> tool.

You can sort the Active Sessions table by clicking any heading of the columns.

Each session will have the following two states:

- Active sessions: if the session is created by a PowerServer, the session will be recognized as an active session for that PowerServer.
- Passive sessions: if the session is backed up in another PowerServer (randomly picked according to the load balancing algorithm), the session will be recognized as a passive

session for that PowerServer. The passive sessions only exist when you enable session backup in the <u>Cluster</u> tool.

### Viewing active devices and sessions that belong to the device(s)

Note: This part is only for mobile applications.

By default, the Device List table lists all the active devices and sessions that belong to the device(s) on all PowerServer.

A device may have several sessions depending on the applications the device is accessing.

If you want to view devices on a particular PowerServer, select the PowerServer from the **View devices for** dropdown list box, and then click the **Refresh** button.

You can sort the **Device List** table by clicking any heading of the columns.

Each session of a device will have the following two states:

- Active sessions: if the session is created by a PowerServer, the session will be recognized as an active session for that PowerServer.
- Passive sessions: if the session is backed up in another PowerServer (randomly picked according to the load balancing algorithm), the session will be recognized as a passive session for that PowerServer. The passive sessions only exist when you enable session backup in the <u>Cluster</u> tool.

### 5.3.1.1.2 Killing session(s) and device(s)

### Killing session(s)

Note: This part is only for Web applications.

You can kill a single or multiple sessions in the Active Sessions table to release PowerServer resources or if you want to perform database maintenance. Each session may include several transactions. When you kill an active session, the active transactions that belong to the session will be rolled back.

Step 1: Check the sessions you want to kill.

Proceed with caution when checking sessions you want to kill.

Step 2: Click the Kill Checked Sessions button.

A message box displays for you to confirm the action. Once you confirm the action, the selected sessions are immediately killed and the Active Sessions table is refreshed.

### Killing device(s) or session(s) that belong to the device(s)

Note: This part is only for mobile applications.

You can kill a single or multiple devices and/or sessions that belong to the device(s) in the Device List table to release PowerServer resources or if you want to perform database maintenance. Each session may include several transactions. When you kill an active device, the active transactions that belong to the session will be rolled back.

Step 1: Check the device(s) or the session(s) that belong to the device(s) you want kill.

If you kill a device, the session(s) that belong to the device will be killed correspondingly.

### Step 2: Click the Kill Checked Sessions button.

A message box appears for you to confirm the action. Once you confirm the action, the selected devices or sessions are immediately killed and the Device List table is refreshed.

### 5.3.1.2 Active Transactions

The AEM Active Transactions tool helps you manage and monitor all active transactions in the system.

### Figure 5.10: Active Transactions

AEM Console	<u>Welcome</u> > <u>Server</u> > <u>Sessions</u> > Active Transactions							
Server ▲	Active Transactions							
Active Sessions <u>Active Transactions</u> Deployment Sessions	View active transactions for: all PowerServers.							
Logging E-Resources E-Product Activation E-Server Security	Kill Session       Transaction ID       Session ID       User name       IP Address       Application Name       Server ID       Duration (s)         Rollback Checked Transactions       Refresh							

### 5.3.1.2.1 Viewing active transactions

By default, the Active Transactions table lists the current active transactions on all PowerServer. If you want to view active transactions on a particular PowerServer, select the PowerServer from the "**View active transactions for**" dropdown list, and click the **Refresh** button. The dropdown list displays all the servers configured in the <u>Cluster</u> tool.

You can sort the Active Transactions table by clicking any heading of the following columns: Transaction ID, Session ID, User Name, IP Address, Application Name, Server ID, Client Type, and Duration.

### 5.3.1.2.2 Rolling back active transaction(s)

You can roll back a single or multiple active transactions in the Active Transactions table to release PowerServer resources or in case of a database deadlock.

Step 1: Check the active transaction(s) that you want to roll back.

Proceed with caution when checking transactions you want to roll back.

### Step 2: Click the Rollback Checked Transactions button.

A message box displays for you to confirm the action. Once you confirm the action, the selected transactions are immediately killed and the Active Transactions table is refreshed.

### 5.3.1.3 Deployment Sessions

The Deployment Sessions tool can help you manage and monitor all the active deployment sessions in the system.

riguit 3.11. Deployment Session	Figure	5.11: ]	Deploym	ent Session
---------------------------------	--------	---------	---------	-------------

AEM Console		Welcome > Server > Sessions > Deployment Sessions				
Welcome	^	Deployment Sessions				
Active Sessions Active Transactions Deployment Sessions		Lists all the currently active deployment sessions. Each deployment session represents an PowerServer Toolkit machine deploying an application to this PowerServer. You may need to kill a deployment session if it terminates abnormally on the PowerServer Toolkit machine.				
		Deployment Session ID         Application Name				
Cluster Data Source		Kill Checked Sessions				

An active deployment session automatically starts and displays in the Deployment Sessions table when PowerServer Toolkit starts to upload the embedded SQL statements, DataWindow SQLs, and INI files of an application to PowerServer. It ends and disappears automatically from the table when the upload process is complete.

There is one special scenario in which you need to manually kill a deployment session in AEM. If the Deployment Wizard of PowerServer Toolkit abnormally exits during the abovementioned upload process, the deployment session stays in active status in PowerServer, and PowerServer Toolkit cannot resume the upload process. Only after you kill the deployment session (by checking the session and clicking the **Kill Checked Sessions** button) or restart PowerServer can the Deployment Wizard continue its job and upload the application.

Note: Killing a deployment session does not affect the ongoing deployment process. It does not have a negative effect if you kill a deployment session by mistake.

# 5.3.2 Logging

Logging is a set of tools for viewing and configuring all the logs.



### Figure 5.12: Logs

### 5.3.2.1 Viewing logs

PowerServer creates three different log files for record keeping and for future use in troubleshooting. You can view these log files using the **View** button or directly locate them in the <AppeonHome>\repository\<InstanceName>\log folder.

On a click on a **View** button either in the **PowerServer Logs** table or in the **Application Server Logs** table, you direct access the log files created by PowerServer and the host application server of PowerServer, such as JBoss.

• PowerServer Logs

Server Log: the main log file. Records messages logged from services and the core PowerServer runtime.

Error Log: the error log.

Deployment Log: records messages logged during application deployments.

• Application Server Log

Server Log: the main log file of the host application server.

The Log Viewer tool provides the following manipulations:

• To view a log file

Click **View** to view the detailed information in the browser. Click the links of different log files to switch between them.

If the size of the specified log file exceeds 2 MB, a message will pop up indicating that the file should be downloaded before viewing.

Figure 5.13: View log files

🕖 AppeonServer.log - Windows Internet Explorer							×
Image:	o?t=3	-	→ ×	Google			₽ -
🚖 🏟 🔃 AppeonServer.log			<b>\</b>	<b>N</b> -	🖶 🔻 🔂 <u>P</u> age '	• () T <u>o</u> ols	; • <sup>»</sup>
1236132682296:1 [09-03-04 10:11:22.296] [com.appeon.Server (run) 1236143765468:1 [09-03-04 13:16:05.468] [com.appeon.Server (run) 1236147325515:1 [09-03-04 14:15:25.515] [com.appeon.Server (run) 1236154805640:1 [09-03-04 16:20:05.640] [com.appeon.Server (run) 1236215018640:1 [09-03-05 09:33:38.640] [com.appeon.Server (run) 1236215947250:1 [09-03-05 09:33:03.890] [com.appeon.Server (run) 1236215783890:1 [09-03-05 09:33:03.890] [com.appeon.Server (run) 1236228906203:1 [09-03-05 12:255:06.203] [com.appeon.Server (run) 1236230767937:1 [09-03-05 13:26:07.937] [com.appeon.Server (run)	] It's not a cluster version server. ] It's not a cluster version server.						
Done		🔞 🍚 Internet   P	rotected	Mode: Off		100% 🔍	<b>▼</b>

• To download a log file

Click **Download** and click Save on the popup dialog.

• To clear a log file

Click **Clear** to remove the contents in the PowerServer log files.

Contents in the application server log file cannot be cleared, because the application server log file may contain records that are not related with Appeon operations.

### 5.3.2.2 Log mode

Select one of the following four modes for log file operation.

• Mode 1: Off

Off mode does not generate any log files **except** error log files. It offers the fastest performance.

• Mode 2: Standard mode

Standard mode is the default mode, and should be used when the system is stabilized. It generates standard log files that are sufficient for providing basic system activity information and notifies you if errors have occurred. This mode may be inadequate for detailed troubleshooting.

• Mode 3: Developer mode

Developer mode generates detailed log files that are sufficient for routine checking and troubleshooting. Performance speed decreases when using this mode.

• Mode 4: Debug mode

Debug mode generates log files that record every system activity in detail and provide the user with information for troubleshooting **obscure** or **hard to find** issues. Debug mode log files are useful for technical support. There is a noticeable slowdown in performance when using this mode.

### 5.3.2.3 Replace log files

Log files accumulate over time, and if they become too large, they can decrease PowerServer performance. Select the "Replace log files..." option to replace the log files periodically. This section is specifically applicable to AppeonServer.log, AppeonDev.log files and AppeonError.log file.

To configure log file settings:

Step 1: Decide whether the log files should be replaced.

• Option 1: Never replace log files

If you select this option, the log files will never be replaced. This option may compromise system performance when the log files become large, in which case they should be manually deleted.

• Option 2: Replace log files ...

If you select this option, this option will replace log files according to conditions configured in Step 2. It is highly recommended that you use this option. To create and keep an archive of all logs, check the "Backup log files before replacing" option.

Step 2: Set the condition for replacing log files by checking one of the options.

• Option 1: Replace log files when size exceeds <u>MB</u>.

The system automatically replaces the log files when the file size exceeds the value set here.

• Option 2: Replace log files every \_\_\_\_ day (s).

The system automatically replaces the log files as stipulated by the value set here.

Step 3: Decide whether the log files should be backed up.

- This setting allows PowerServer to back up the log files before replacing them. If this option is checked, all log files are backed up before they are replaced so an archive of the log files is maintained. Maintaining this archive does not compromise system performance, but there must be adequate hard disk space for the backup log files.
- All backup log files are named according to the following format: Log File name ("LogSystem") + an underscore ("\_") + the time of the creation of the backup file (yyyy/mm/dd/hh/mm) + ".bak". For example: LogSystem\_200504081213.bak.

# 5.3.3 Resources

Resources is a set of tools for viewing and configuring the servers cluster, temporary files and configuration backups. There are two tools: Cluster and Maintenance.

### Figure 5.14: Resource

AEM Console		Welcome > Server > Resources				
── Welcome □─ Server	*	Resources				
Legging		Contains cluster serv	er list and settings and other maintenance settings.			
E Resources Cluster		Cluster	Configures the connection settings for all Appeon Servers that are being load-balanced so that AEM can interface with all the Appeon Servers included in the logical cluster. Single Appeon Server installations should skip this configuration.			
Product Activation		Maintenance	Configures the temporary file and profile file cleanup settings, and backs up the AEM configuration files.			

### 5.3.3.1 Cluster

Once you installed PowerServer to several application servers, you can use the AEM Cluster tool to create a PowerServer cluster and configure the load balancing and failover settings of the cluster.

Note that the load balancing and failover features mentioned in this section are implemented using a plug-in specially provided by Appeon. You will need to configure this Appeon plug-in after creating the PowerServer cluster in AEM. For detailed instructions, refer to Chapter 6, *Tutorial 5: Configure PowerServer Cluster* in *PowerServer Mobile Tutorials*.

You can also implement the load balancing feature (but not failover) using the plug-in provided by the application server. Detailed instructions can also be found in the Web Server Configuration Guide.

ble		<u>Velcome</u> > <u>Serv</u>	rer > <u>Resources</u> > Cluster					
	~ B	Cluster Server List						
		The following displays information for all PowerServers in the cluster. Please add the local machine first before you add any other server.						
P		Connect type:						
au Source		Actions	IP Address	Port	Status			
Aanagement ecurity		Add PowerSe	Add PowerServer Remove All					
ation Summary	8	J Load Balancing						
res		Load balancing algorithm:						
atures nsfer	E	<sup>3</sup> Fallover						
nce curity		Enable Session Backup						
pp Distribution sizing		Session Level						
ize Size		Request Level						
		Enable Heartbeat Backup						
		Enable Remote Backup						
		Interval Time 30 seconds						
		Mirror Backup						
	Rotation Backup     Enable Logical Restore with Status Montor							
*								
1								

### Figure 5.15: Cluster

### 5.3.3.1.1 Cluster Server List

Use the **Cluster Server List** to create a PowerServer cluster. The PowerServer listed in the **Cluster Server List** group share the same AEM settings, and can work as a cluster in supporting the requests from their associated Web server.

### Important requirements

- All of the PowerServer to be added into the cluster must have the same connection type: HTTP or HTTPS; it cannot be a mix.
- Use the IP address or machine name of the PowerServer when adding a PowerServer. Do not use "localhost" or "127.0.0.1".
- The IP address or machine name and port number must match the HTTP or HTTPS settings in the application server.
- Add the server that the current AEM runs on as the first member of the cluster, and if you want to remove all servers from the list, remove it last.
- To successfully synchronize/save a specific setting to all servers in the list, verify that servers are running before you save it.
- An application must be deployed to all servers in the cluster to make sure the cluster functions properly. Use the Appeon Deployment Wizard to perform the application deployment. For detailed instructions, refer to the Chapter 6, *Deploying PowerBuilder Applications* in *PowerServer Toolkit User Guide*.
- To ensure the most efficiency and stability of the PowerServer cluster, verify that the environment of all PowerServer is identical. For example, the application server (type and version) and PowerServer (version and license) must be the same.
- If you need to reinstall the operating system of a PowerServer in the cluster, be sure to remove the PowerServer from the cluster first.

### Adding a PowerServer

Make sure you add the server that the current AEM runs on as the first member of the cluster.

Step 1: Select the connection type (HTTP or HTTPS) for the PowerServer cluster.

All of the PowerServer to be added into the cluster must have the same connection type: HTTP or HTTPS.

Step 2: Click the **Add PowerServer** button in the **Cluster Server List** table. The Add PowerServer page opens.

Figure 5.16: Add PowerServer

V	/elcome > <u>Server</u> > <u>Reso</u>	urces > <u>Cluster</u> > Add PowerServer
⊟	Add New PowerServer	
	Verify that all servers in the cli is recommended to install the	uster contain the same deployed applications. When creating a cluster, add the server that the current AEM runs on as the first member of the cluster. It same PowerServer version in a cluster.
	Connect type:	HTTP
	IP Address:	
	Port:	
	AEM User Name:	
	AEM Password:	
	Save and Add Save	

Step 3: Verify that the PowerServer to be configured is running and provide the required information (IP address, port, and the AEM login user name and password). For example:

- IP address: 161.0.0.1
- Port: 80
- AEM User Name: admin
- AEM Password: admin

Step 4: Click the **Save** and **Save and Add** button. The program will automatically test the connection and add the PowerServer if the test is successful.

Adding a PowerServer will succeed only if:

- 1. The PowerServer is new to AEM.
- 2. The information provided is correct.
- 3. The PowerServer is running.
- 4. The first PowerServer that you add is the one hosting the current AEM.
- 5. The password is correct.

### Removing a PowerServer

Make sure you remove the server that the current AEM runs on first.

To remove a PowerServer from the list:

Step 1: Click the **Delete** button in the Actions column of the PowerServer in the PowerServer Cluster table.

Step 2: A message box appears requiring confirmation. Choose **OK** to proceed with the deletion, or choose **Cancel** to cancel.

Step 3: By clicking on the **OK** button, the PowerServer is removed from the PowerServer list. AEM no longer interfaces with the PowerServer.

To remove all PowerServer from the list:

Click the **Remove All** button and then click **OK** in the popup message box to confirm the deletion.

### Checking status of PowerServer

A PowerServer in a cluster must be in the "Running" status in order to handle the requests from Web server. PowerServer has the following status:

- Shut down: PowerServer is not started or not available.
- Ready: PowerServer is preparing itself to accept user requests by taking the essential initialization process.
- Running: PowerServer is started and accepts user requests.
- Failed: PowerServer failed to start or failed to verify license.

### 5.3.3.1.2 Load Balancing Settings

Load Balancing Settings determine how requests will be distributed among the servers in the cluster to optimize system performance and how servers in the cluster will be picked as peer servers. PowerServer cluster supports the following two load balancing algorithms:

- Random -- distributing requests across servers in random order, regardless of the status of servers.
- Sequence -- directing requests to servers in an allocated order. The sequence algorithm, which is also known as round-robin, is simple, cheap and very predictable.

Either algorithm can provide optimal performance for servers of similar configuration and specification, because it evenly sends requests to each server in the cluster.

### 5.3.3.1.3 Failover Settings

Failover Settings determine how the session information in the servers of the cluster is backed up in the system for failover support. With the backup settings, the sessions at a failed server can be continuously supported by the same server after the server is restarted by its status monitor, or supported by another server in the cluster. Because session backup does not back up transaction information, there may be some loss to the operations in the sessions, but the users can continue running the sessions without re-login.

PowerServer cluster provides two major backup options for failover: session backup and heartbeat backup.

### Session backup

Session backup options enable a session to be backed up when PowerServer detects that the session status changes or it receives a request from the same session. You can specify the backup with different levels:

- Session level -- backing up a session when PowerServer detects that the session is created or destroyed, or when a transaction starts or ends in the session.
- Request level -- backing up a session each time when PowerServer receives a request from the same session, regardless of the session status.

### Heartbeat backup

Heartbeat backup options enable PowerServer to automatically back up sessions at the internals you specify.

- Remote backup: backing up all sessions from the local machine to the peer server (another server in the cluster which was picked randomly or in sequence) at the intervals you specify in the Interval Time box. Remote backup includes mirror backup and rotation backup.
  - Mirror backup: periodically backing up all sessions from the local machine to the peer server. A session is backed up at a fixed peer server. If the peer server fails, the session backup no longer works.
  - Rotation backup: periodically backing up all sessions from the local machine to the peer server. The peer server at which a session is backed up can be changed. That is, if the first peer server fails, another server will be picked as the peer server for the backup.
- Logical Restore with Status Monitor -- backing up all sessions from the local machine to the peer server and allowing both "active" and "passive" sessions to be restored after a failed server is restarted by status monitor. If this option is disabled, only "active" sessions on the failed server will be recovered. Each server in the cluster maintains a list of "active" sessions and a list of "passive" sessions. The server recognizes a session as an "Active" session if it is created here and recognizes a session as a "Passive" session if it is created in another server and backed up here. The interval of this backup option is specified in the configuration file (monitor.props) of Status Monitor.

### 5.3.3.1.4 Synchronizing AEM settings to servers in a cluster

Once a PowerServer is added to the Cluster Server list, you can use the AEM which maintains the list to manage all servers in the cluster. Whenever you change the settings of this AEM and click **Save**, the settings will be saved to the other servers in the cluster. Therefore, you do not need to repeat the configuration in each AEM. However, not all of the AEM settings can be synchronized, because some settings are not necessary to be the same for all servers. The following settings will not be synchronized:

- Logging: displays the log files on the current server only.
- Auto cleanup and Manual cleanup in Maintenance: clears the temporary files of the current server only.
- Deployment Sessions: displays the active deployment sessions of the current server only.
- Licensing: displays the license information and status of the current server only.
- Data Source: displays and configures the data source related with the current server only.

- DataWindow Data Cache: displays and configures the DataWindow data cache related with the current server only.
- AEM login: displays and configures the login information of AEM on the current server only.

The following action will not be synchronized:

• Killing active sessions: this action will terminate the session on the current server only.

### 5.3.3.2 Maintenance

Maintenance is a set of tools for clearing temporary files and backing up configurations.

Figure 5.17: Maintenance

AEM Console			Welcome > Server > Resources > Maintenance		
Welcome					
Server     Services			Clean Up Periodically		
Logging			Clean up the information that is last accessed over: 5 day(s) 6	hour(s) ago	
Resources     Cluster			Clean up temporary registry and profile configuration files.		
<u>Maintenance</u> Product Activation			Save		
Server Security     Application			Clean Up Now		
Screen Size			Clean up temporary registry and profile configuration files.		
└─ Window Size			Clean Up		
			Configuration Backup		
			You can back up the configuration files, once these files are corrupted, you can restore them from the backup files.		
		,,	File Name	Description	
		~~	aem-config.xml	Contains security settings for validating users logging into Appeon AEM.	
			appeoncache.conf	Contains the settings for the maximum memory cache of Appeon Server.	
			applications-config.xml	Contains the settings for all applications, such as, application name, transaction object, and so on.	
			Cluster-config.xml	Contains the settings for configuring Appeon cluster.	
			log4j.properties	Contains the settings of Appeon AEM log.	
			server-config.xml	Contains the settings for configuring log mode and LDAP security.	
-			threadqueue.xml	Contains the settings for the maximum number of concurrent requests in Appeon Server.	
Description			Backup Mode: O Server-side O Client-side		
Description			Destination Directory:		
You can back up the configuration files, once these files are corrupted, you can restore them from the backup files.			Archive Mode ONN-Arc	hive Mode	
			Back up Import		

### 5.3.3.2.1 Auto cleanup

To perform an auto-cleanup for temporary files in the "Clean Up Periodically" group box:

Step 1 -- Specify to clean up files that have not been accessed for the specified period.

For example, "Clean up the information that is last accessed over:  $\underline{2}$  days  $\underline{4}$  hours ago" denotes that files that were accessed over 2 days and 4 hours ago will be cleaned up everyday.

Step 2 -- Choose whether to clean up the temporary register and profile configuration files by selecting or de-selecting the check box for "Clean up temporary register and profile configuration files".

Step 3 -- Click the *Save* button to apply changes.

### 5.3.3.2.2 Manual cleanup

This feature is not usually necessary if the auto-cleanup feature is used, but it can be helpful between scheduled cleanups if a sudden increase in activity on the system causes an influx of temporary files resulting in declines in performance.
To perform a manual cleanup in the "Cleanup Now" group box:

Step 1 -- Choose whether the temporary register and profile configuration files to be cleaned up by selecting or de-selecting the check box for "Clean up temporary register and profile configuration files".

Step 2 -- Click the *Clean Up* button to commit the cleanup.

The selected temporary files will be deleted immediately from all the PowerServer that are configured in the AEM PowerServer Cluster page.

# 5.3.3.2.3 Configuration Backup

The AEM configuration files can be backed up and restored easily using the Configuration Backup tool.

# To back up the AEM configuration files:

Step 1: Select one or more configuration file from the file list.

Step 2: Select the backup mode.

- Server Mode -- Backs up the configuration files and stores on the PowerServer machine.
- Client Mode -- Backs up the configuration files and stores on the local client machine. You will be prompted to specify the location to store the backup file after clicking the **Back Up** button.

Step 3: If you select Server Mode in Step 2, then specify the destination location for the backup files. The destination location must be an existing directory on the PowerServer machine.

Step 4: Specify the archive mode for the backup files.

- Archive Mode indicates the backup files will be packaged into a zip file. If Client Mode is selected as the backup mode, Archive Mode will be used by default.
- Non-Archive Mode indicates the backup files will be existing in separate files.

Step 5: Click the **Back Up** button to back up files.

# To import the AEM configuration files:

Step 1: Click the **Import** button.

Step 2: In the **Import Configuration File** page, click **Browse** to select the backup file to import. The backup file can be a single file or a zip file which contains multiple files.

Step 3: Click **Import** to import the selected backup file.

# **5.3.4 Product Activation**

Product Activation is a set of tools for viewing product license information and activating products. There are two tools: Licensing and Support.

## **Figure 5.18: Product Activation**

AEM Console	Welcome > Serve	r > Product Activation
Welcome	Product Activation	
E Sessions Logging	Contains product act	vation and technical support.
Resources     Product Activation	Licensing	Displays license information and allows you to process the Appeon license.
Licensing	Support	Displays product support information and allows you to process the support license.
Support		

# 5.3.4.1 Licensing

The Licensing tool enables you to view the detailed license information, activate or deactivate a PowerServer, and update the license.

Figure 5.19: Licensing

AEM Console		<u>Welcome</u> > <u>Server</u> > <u>Product Activation</u> > Licensing	
Welcome	F		
	6	Licensing	
Logging		You are entitled to the following product features. Each copy of Appeon Server could be ac	tivated on a specific machine only.
⊞ Resources		Product Information	
Product Activation		Product Edition: Unlicensed edition (Appeon)	
Licensing		Product Version: 6.6.0265.01 32-bit Edition	
E Server Security		Operating System: Windows 7	
Application		Application Server: .NET	
⊞-Mobile UI Resizing		Web Activation Information	
		Web Product Key: *	
		Web Maximum Sessions: *	
		Other Activation Information	
	~	Server ID: Kg==	
		Activation Status: UN ACTIVATED	
		Days Remaining: 493	
		Activation Date: N/A	
		Features Licensed	
		Clustering Option: Yes	
*		Offline Option: Yes	
Description		Number of CPUs Licensed: *	
Description		Number of Cores Per CPU: *	
Displays license information and		Type of CPU Licensed: Logic	
allows you to process the Appeon license.		Activate De-Activate Upgrade License	

# 5.3.4.1.1 Product Activation

After you purchase the product, you will need to activate PowerServer for permanent use. See the following flowchart for the activation process.

#### Figure 5.20: Activation process



The following are detailed instructions for you to activate the product via AEM:

Step 1: Generate the activation request (the Appeon BIN activation file).

- 1. On the **Licensing** page, click the **Activate** button.
- 2. On the **Product Activation** page, do the following:
  - From the **Product Key Type** dropdown list box, select the product type that you have purchased.

The difference between **PowerServer Web & PowerServer Mobile** and **PowerServer Web & Mobile** is mainly the way of allocating the sessions/devices. For **PowerServer Web & Mobile**, Web apps and mobile apps can share the unused sessions/devices; while for **PowerServer Web & PowerServer Mobile**, the Web apps and the mobile apps are strictly limited by their own session counts. For example, if the Web session is set to 5, and the Mobile session is set to 10, then for **PowerServer Web & PowerServer Web & Mobile**, so long as the total sessions do not exceed 10, while for **PowerServer Web & Mobile**, so long as the total sessions do not exceed 15, the Web session can go over 5 if there are unused Mobile sessions, or the Mobile sessions can go over 10 if there are unused Web sessions.

- From the **Control Type** dropdown list box, select a control type.
  - a. Application: it controls how many applications on this PowerServer can be accessed at a particular time.

b. Session/Device: it controls how many sessions and/or devices can access the apps on this PowerServer at a particular time. For Web applications, each application instance running on the client is considered as one session, for mobile applications, each mobile device that is accessing the app (no matter how many apps) is considered as one device.

The Appeon mobile app will need to get the device ID when running on the mobile device, so that the app as well as other Appeon mobile apps running on the same mobile device can be recognized as running on one device by the Appeon license file, not running on multiple devices.

# **About App ID for iOS apps**

For iOS apps, to enable the app to get the device ID successfully, you will need to correctly specify the App ID Prefix and the App ID Suffix (Bundle ID):

i. App ID Prefix: you should always input the same App ID Prefix for all Appeon mobile apps.

You can specify the App ID Prefix when packaging the mobile project in the PowerServer Toolkit Package tool in *PowerServer Toolkit User Guide*.

ii. App ID Suffix (Bundle ID): Bundle ID is used to identify the application, therefore it must be unique for different applications.

You can specify the Bundle ID when packaging the mobile project in the PowerServer Toolkit Package tool in *PowerServer Toolkit User Guide*.

You should specify the consistent Bundle ID in the Xcode project for the same application. For details, refer to Section 5.2.3.1, "Task 3.1: Set App ID and Bundle Identifier" in *PowerServer Mobile Tutorials*.

- In the product key field(s), double check the product key and modify it if it is incorrect.
- From the **Server Type** list, select **Dedicated Server** if the server is running on hardware that is dedicated for your use; select **Azure Virtual Machine** if the server is running on a virtual machine created in Windows Azure; select **AWS Virtual Machine** if the server is running on a virtual machine created in Amazon Web Services.
- When **Azure Virtual Machine** server type is selected, select the appropriate deployment model for the Azure virtual machine.
  - Resource Manager VM -- You will need to provide the following information: Azure Subscription ID, Directory ID, Application ID, Key Value, and Virtual Machine Name.

In order to get these information, you will need to first make configurations according to <u>https://docs.microsoft.com/en-us/azure/azure-resource-manager/</u>resource-group-create-service-principal-portal.

- Classic VM -- You will need to provide the following information: Azure Subscription ID, and Deployment Label.
- Upload Package -- You will need to provide the following information: Azure Subscription ID, and Deployment Label.

You can get the information of **Subscription ID** and **Deployment Name** by selecting the proper service name from the Azure website portal.

IMPORTANT: If Classic VM or Upload Package deployment model is selected, you will also need to log into the Azure administration portal (<u>https://manage.windowsazure.com/</u>), download the certificate file (<u>https://manage.windowsazure.com/publishsettings</u>), rename the file to *credentials.publishsettings* and copy the file to the local PowerServer installation directory \% appeon%\AEM\Cert. If the *Cert* folder does not exist, please manually create it.

Please make sure you complete these steps before you apply the Appeon license file, and keep the certificate file exist in the specified directory whenever PowerServer is activated and running.

- When **AWS Virtual Machine** server type is selected, specify the settings for the server instance created in Amazon Web Services. These settings can be obtained from the AWS console. For detailed instructions, see <u>AWS server instance settings</u>.
- (Optional) Check the **Is Virtual Machine** checkbox, if the dedicated server is running on a virtual machine rather than a physical machine.
- (Optional) Check the **Support Offline** checkbox, if your license supports offline features.
- Click the Generate Activation Request button.

1	Nelcome > <u>Server</u> > <u>License</u>	Management > Licensing > Product Activation
Ξ	Product Activation	
	To activate your software, please c file that will be used by Appeon to a	lick the "Generate Activation Request" button. The information displayed in the table will be packaged into a data activate your software on this machine.
	Product edition:	Unlicensed edition (appeon)
	Product Version:	Appeon PowerServer 2017 Build 1676.00
	Application Server:	.NET
	Operating System:	Windows 7
	Product Key Type:	PowerServer Web & Mobile(One product key) 🗸
	Control Type:	Session/Device
	Universal Product Key:	APFA-DEWN-EAEN-UNAP-GGEE-EEEE-FQHS
	Server ID:	MCM3OC00NS1DNC0xMS00Ni0yRnwwMC01MC01Ni1DMC0wMC0wMQ==
	Server Type:	Dedicated Server
	Is Virtual Machine:	□ (Select this checkbox if server is a virtual machine.)
	Support Offline:	$\checkmark$
	Generate Activation Request	Apply License

# Figure 5.21: Product activation

3. Click the **Download File** button to download the request file which is by default named as license.activation.bin and send it to <license@appeon.com>. The request will be processed in Appeon and an activated permanent license (license.appeon) will be sent to you later.

#### Figure 5.22: Download activation request



Step 2: Install the permanent license file.

The license file must be installed within 30 days after it's generated. If this 30-day install period has expired, the license file cannot be installed, and there will be an error in AEM when you try to install it. In this case, you will need to send the license file back to Appeon and have Appeon extend the install period for this file. Once you get the license file, follow the steps below to install it via AEM.

1. After getting the permanent license (license.appeon) from Appeon, click the **Apply** License button.

Welcome > Server >	License Management > Licensing > Product Activation					
Product Activation						
To activate your softwa file that will be used by	To activate your software, please click the "Generate Activation Request" button. The information displayed in the table will be packaged into a da file that will be used by Appeon to activate your software on this machine.					
Product edition:	Unlicensed edition (appeon)					
Product Version:	Appeon PowerServer 2017 Build 1676.00					
Application Server:	.NET					
Operating System:	Windows 7					
Product Key Type:	PowerServer Web & Mobile(One product key) 🗸					
Control Type:	Session/Device					
Universal Product Key	APFA-DEWN-EAEN-UNAP-GGEE-EEEE-FQHS					
Server ID:	MCM3OC00NS1DNC0xMS00Ni0yRnwwMC01MC01Ni1DMC0wMC0wMQ==					
Server Type:	Dedicated Server					
Is Virtual Machine:	□ (Select this checkbox if server is a virtual machine.)					
Support Offline:	$\checkmark$					
Generate Activatio	n Request Apply License					

# Figure 5.23: Product activation

2. Click the **Browse...** button and select the license.appeon file. The file name must be exactly license.appeon, and it is case-sensitive. Click the **Import** button to import the license file. Please make sure the license file is imported successfully, and then restart PowerServer.

# Figure 5.24: Apply license

Apply License	Apply License							
Click Browse a	nd find the license file from the specified directory, then click Import to upload the license file. Restart the Appeon server to activate the license.							
License File:	Browse							
Import								

3. After you restart PowerServer, go back to the Licensing page, and verify that Activation Status is shown as Activated.

Licensing	
You are entitled to the following product features.	Each copy of Appeon Server could be activated on a specific machine only.
Product Information	
Product Edition:	DEVELOPER (Appeon)
Product Version:	6.6.0077.00 32-bit Edition
Operating System:	Windows 7
Application Server:	.NET
Mobile Activation Information	
Mobile Product Key:	*
Maximum Mobile Devices:	10
Other Activation Information	
Server ID:	MCNGMC00RC1BMi0yQS0wQi1GOXwwMC01MC01Ni1DMC0wMC0wMXwwMC01MC01Ni1DMC0wMC0wOA==
Activation Status:	ACTIVATED
Days Remaining:	*
Activation Date:	12/01/2012
Features Licensed	
Clustering Option:	No
Offline Option:	Yes
Number of CPUs Licensed:	1
Number of Cores Per CPU:	8
Type of CPU Licensed:	Physics
Activate De-Activate Upgrade License	

# Figure 5.25: Licensing

4. Back up your permanent license file so you can use it again in case you will reinstall PowerServer within the 30-day install period.

# AWS server instance settings

The information required for activating PowerServer on AWS includes: the region code of the account, the key ID and secret key of the user, the keyword prefix of the server instance, and the number of instances allowed for deploying PowerServer. All these information (except for the number of instances) can be obtained from the AWS console, as highlighted below.

• Region: the region code (NOT the region name) of the AWS account.

To get the region code of the AWS account, first log into the AWS console and get the region name on the top right corner of your account center, then search the region name on the Web page: <u>http://docs.aws.amazon.com/general/latest/gr/rande.html#apigateway\_region</u> to get the corresponding region code.

- Key ID: The access key ID of the AWS user.
- Secret Key: The access secret key of the AWS user.

To get the access key ID and the access secret key of the AWS user, first log into the AWS console and go to the **Users** area.

#### Figure 5.26: Users area

Search IAM	Add user Delete user				My Account My Organization		2 0
Dashboard	Q Find users by username or act	cess key			My Billing Dashboard		Showing 1 result
Groups	User name 👻	Groups	Access key age	Passv	My Security Credentials	ty	MFA
Roles					Sign Out		
Policies							
Identity providers							
Account settings							
Credential report							
Encryption keys							

When you add a new user, be sure to select the **Programmatic access** type, and assign the user to the group with **AmazonEC2ReadOnlyAccess** permissions.

# Figure 5.27: Access type

Add user			1	2	3	-4
			Details	Permissions	Review	Complete
Set user details						
You can add multiple users at c	once with the same a	ccess type and permissions. Learn mo	re			
	User name* 🛛	WS_API				
	0	Add another user				
Select AWS access type						
Select how these users will acc	ess AWS. Access key	vs and autogenerated passwords are p	provided in the last step. Learn r	nore		
	Access type* 🕑	Programmatic access Enables an access key ID and sec AWS Management Console acce Enables a password that allows us	eret access key for the AWS Al ss ers to sign-in to the AWS Manag	PI, CLI, SDK, and other de	evelopment tools.	

#### Figure 5.28: User group

Search					
eate group 🛛 C R	efresh				Chowing 1 result
user to an existing grou	up or create a new one. Using gro	oups is a best-practice way to mana	je user's permissions by job functio	ons. Learn more	
ia user to group	existing user	directly			
	Copy permissions from	Attach existing policies			
222	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~				
	R				

After the user is added, you can get the access key ID and the access secret key.

		0-	2	3	-4
		Details	Permissions	Review	Complete
0	Success You successfully created the users shown below. You can view and	d download user security credentials. You can a	ilso email users instruc	tions for signing in to the	e AWS Management
L Dow	Users with AWS Management Console access can sign-in at: https://www.moad.csv	uuwintaat Huwever, yoo can cieate new cieate //368682886329 signin aws amazon com/cons	ole		
L Down	User User	Jowinioad However, you can cleare new cleare //368682886329.signin.aws.amazon.com/cons Access key I	ole D	Secret access key	

#### Figure 5.29: Access key ID and secret key

• **Keyword Prefix**: A string that matches with the name prefix of the server instance(s) where PowerServer is deployed. There are two types of server instance where PowerServer can be deployed: **Elastic Beanstalk(EB)** and **Amazon Elastic Compute Cloud(EC2)**.

When creating an instance of **Elastic Beanstalk(EB)**, the **Environment name** must start with the keyword prefix specified for the PowerServer license activation. For example, "Appeon" is the keyword prefix.

#### Figure 5.30: Environment name

Launch an environment wit manage AWS resources ar	unch an environment with a sample application or your own code. By creating an environment, you allow AWS Elastic Beanstalk to anage AWS resources and permissions on your behalf. Learn more						
Environment informat	invironment information						
Choose the name, subdom	ain, and description for your environment.	These cannot be changed later.					
Application name	appeon-eb						
Environment name	Appeon-Eb						
Domain		.us-east-1.elasticbeanstalk.com	Check availability				
Description		/					
Base configuration							

When creating an instance of **Amazon Elastic Compute Cloud(EC2)**, the key pair must start with the keyword prefix specified for the PowerServer license activation. For example, "appeon" is the keyword prefix.

1

# Figure 5.31: Key pair

Select an existing key pair or create a new key pair	×
A key pair consists of a <b>public key</b> that AWS stores, and a <b>private key file</b> that you store. T they allow you to connect to your instance securely. For Windows AMIs, the private key file is to obtain the password used to log into your instance. For Linux AMIs, the private key file allow securely SSH into your instance.	ogether, required ws you to
Note: The selected key pair will be added to the set of keys authorized for this instance. Learr about removing existing key pairs from a public AMI.	n more
Choose an existing key pair	•
Select a key pair	
appeonkey	•
I acknowledge that I have access to the selected private key file (appeonkey.pem), and without this file, I won't be able to log into my instance.	that
Cancel Launch Insta	ances

After you create an instance (either Elastic Beanstalk(EB) or Amazon Elastic Compute Cloud(EC2)), you can modify the instance name. Make sure the prefix of the instance name matches with the keyword prefix specified for the PowerServer license activation.

Events Tags Reports Limits I Instance ID I Instance Type I Availability Zone I Instance Status Checks Alarm Status Public DNS (IPv4) IPv4 I Instances Spot Requests Reserved Instances Scheduled Hosts Dedicated Hosts Dedicated Hosts I IMAGES AMIs Bundle Tasks ELASTIC BLOCK STORE Volumes Snapshots I Instance I I OctbdSeeeSoBbbee Public DNS: ec2-54-160-211-139.compute-1.amazonaws.com I Instance: I I OctbdSeeeSoBbbee Public DNS: ec2-54-160-211-139.compute- 1.amazonaws.com I Instance ID I OctbdSeeeSoBbbee Public DNS: ec2-54-160-211-139.compute- 1.amazonaws.com I Instance ID I OctbdSeeeSoBbbee Public DNS: ec2-54-160-211-139.compute- 1.amazonaws.com I Instance ID I OctbdSeeeSoBbbee Public DNS (IPv4) ec2-54-160-211-139.compute- 1.amazonaws.com	EC2 Dashboard	Launch Instance Connect Actions V		0
Tags       Reports         Limits       Instance ID         Instances       Instance ID         Instances       Spot Requests         Resorved instances       Scheduled instances         Dedicated Hosts       9/255         Instance:       10/2000/2000/2000/2000/2000/2000/2000/2	Events			
Reports Limits Name Instance ID Instance Type Availability Zone Instance State Status Checks Alarm Status Public DNS (IPv4) IPv4 Appeare Etc III instance ID Instance ID Instance State Status Checks Alarm Status Public DNS (IPv4) III instance ID I	Taos	C Filter by tank and attributes or search by Verword		
Limits  I INSTANCES I INSTANCES Spot Requests Reserved Instances Dedicated Hosts  ELASTIC BLOCK STORE Volumes Snapshots Reserving Status Checks Monitoring Tags Instance ID i-Octod9eee9c9bbbee Public DNS (PM) eC254-160-211-133.compute- 1.amazonaws.com Instance ID i-Octod9eee9C9bbbee Public DNS (PM) eC254-160-211-133.	Reports			
Limits Instances Spot Requests Reserved instances Scheduled Instances Dedicated Hosts Dedicated Hosts ELASTIC BLOCK Volumes Snapshots Description Status Checks Monitoring Tags Instance ID i-Qichd9aee9c9bbbee Public DNS (P:4) Decompute-1.amazonaws.com Instance ID i-Qichd9aee9c9bbbee Public DNS (P:4) ELASTIC BLOCK Volumes Snapshots Description Status Checks Monitoring Tags Instance ID i-Qichd9aee9c9bbbee Public DNS (P:4) Instance ID i-Qichd9aee9c9bbbee ID II II II	Limite	Name   Instance ID   Instance Type   Availability Zone   Instance State   Status Checks   Alarm Status   Public DNS (IPv4)	~	IPv4
<ul> <li>INSTANCES</li> <li>Instances</li> <li>Scheduled Instances</li> <li>Dedicated Hosts</li> <li>IMAGES</li> <li>AMS</li> <li>Bundie Tasks</li> <li>ELASTIC BLOCK</li> <li>Stope</li> <li>Public DNS (EAU)</li> <li>Instance ID i-Octod9eee9c9bbbee</li> <li>Instance ID i-Octod9eee9c9bbee</li> <li>ID i-Octod9eee9c9bbee</li> <li>ID i-Octod9eee9c9bbee</li> <li>ID i-Octod9eee9c9bbee</li> <li>ID i-Octod9eee9c9bbee</li> <li>ID i-Octod9eee9c9bbee</li> <li>ID</li></ul>	LITTLS			
Instances       9/25         Spot Requests       Reserved Instances         Scheduled Instances       Scheduled Instances         Dedicated Hosts       Images         AM/s       Bundle Tasks         Bundle Tasks       Instance:         Dedicated Hosts       Images         AM/s       Bundle Tasks         Bundle Tasks       Imstance:         UNAGES       Imstance:         Ji-Ofchd9eee9c9bbbee       Public DNS: ec2-54-160-211-139.compute-1.amazonaws.com         Volumes       Snapshots         Description       Status Checks         Instance ID       Hochd9eee9c9bbbee         Instance ID       Hochd9eee9c9bbee         Instance ID       Hochd9eee9c9bbbee         Instance ID       Hochd9eee9c9bbbee         Instance ID       Hochd9eee9c9bbee         Instance ID       Hochd9eee9c9bbee         Instance ID       Hochd9eee9c9bbee         In	<ul> <li>INSTANCES</li> </ul>	Appeon-Eb 12.micro us-east-1a 🥥 running 🧭 2/2 checks None 🍃 ec2-54-160-211-139.c	0	54.1
Spot Requests Reserved Instances Scheduled Instances Dedicated Hosts Bundle Tasks Bundle Tasks B	Instances	9/255 🗴 🛇		
Reserved Instances       Scheduled Instances         Dedicated Hoss       Dedicated Hoss         MagGES       AMis         Bundle Tasks       ELASTIC BLOCK         Volumes       Instance:   i-Ocfbd9eee9c9bbbee         Snapshots       Description         Status Checks       Monitoring Tags         Instance ID       i-Decbd9eee9c9bbbee         Instance ID       i-Decbd9eee9c9bbee         Instance ID       i-Decbd9eee9c9bbbee         Instance ID       i-Decbd9eee9c9bbee         Instance ID	Spot Requests			
Scheduled instances Dedicated Hosts Bundle Tasks Bundle T	Reserved Instances			
Instance ID iOctodes Monitoring Tags      Instance ID iOctodes eege 29bbbee     Public DNS (PM) ec254 160-211-139.compute- 1.amazonaws.com     Instance ID iOctodes eege 29bbbee     Public DNS (PM) ec254 160-211-139.compute- 1.amazonaws.com     Instance ID iOctodes eege 29bbbee     Instance 29bbee     Instance 29bbbee     Instance 29bbee     Instance 29bbeee	Scheduled Instances			
	Dedicated Hasta			
<ul> <li>IMAGES AMIS Bundle Tasks</li> <li>Bundle Tasks</li> <li>Bundle Tasks</li> <li>Instance: i of of bd9eee9c9bbbee</li> <li>Public DNS: ec2-54-160-211-139.compute-1.amazonaws.com</li> <li>Instance: i of of bd9eee9c9bbbee</li> <li>Public DNS: (PA4)</li> <li>ec2-54-160-211-139.compute- 1.amazonaws.com</li> <li>Instance ID</li> <li>Instance ID</li> <li>Instance state</li> <li>Instance state</li> <li>Instance state</li> <li>Instance in instance</li> <li>Instance instance</li></ul>	Dedicated Hosts			
AMIS Bundle Tasks Bundle Tasks Bundle Tasks Store Store Store Store Snapshots Bescription Status Checks Monitoring Tags Description Status Checks Monitoring Tags Description Status Checks Monitoring Tags Description Status Checks Monitoring Tags Description Status Checks Monitoring Tags Instance ID i-Octbd9eee9c9bbbee Public DNS (PM) ec264-160-211-139 compute- 1.amazonaws.com Instance state running IPV4 Public IP 64.160.211.139	<ul> <li>IMAGES</li> </ul>			
Bunde Tasks Bunde Tasks ELASTIC BLOCK STORE Volumes Snapshots Description Status Checks Monitoring Tags Description Status Checks Monitoring Tags Instance ID i-Octhd9eee9C9bbbee Public DNS (IP4) ec254-160-211-139.compute- 1.amazonaws.com Instance ID i-Octhd9eee9C9bbbee Public DNS (IP4) ec254-160-211-139.compute- 1.amazonaws.com Instance state running Instance ID i-Octhd9eeegeeses Instance ID i-Octhd9eeeeeses Instance ID i-Octhd9eeeeeses Instance ID i-Octhd9eeeeeses Instance ID i-Octhd9eeeeeses Instance ID i-Octhd9eeeeseses Instance ID i-Octhd9eeeeeeses Instance ID i-Octhd9eeeeeeses Instance ID i-Octhd9eeeeeeses Instance ID i-Octhd9eeeeeeses Instance ID i-Octhd9eeeeeeeee Instance ID i-Octhd9eeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeeee	AMIS			
ELASTIC BLOCK STORE Volumes Snapshots Bescription Status Checks Monitoring Security Security Se	Bundle Tasks			
ELSATIC BLOCK STORE Volumes Snapshots      NETWORK & SECURITY Security Groups Elastic IPs Instance ID Instanc				
Instance:     i-Octodesee9c9bbbee     Public DNS: ec2-64-160-211-139.compute-1.amazonaws.com       Snapshots     Description     Status Checks     Monitoring       Tags     Instance ID     i-Octodesee9c9bbbee     Public DNS (IPM)       Security Groups     Instance ID     i-Octodesee9c9bbbee     Public DNS (IPM)       Elastic IPs     Instance state     running     IPV Public IP	ELASTIC BLOCK	4		•
Snapshots Snapshots SECURITY Security Groups Elastic IPs Instance state Instance Instance state Instance Instance Instance state Instance Instance Ins	Volumes	Instance: i-0cfbd9eee9c9bbbee Public DNS: ec2-54-160-211-139.compute-1.amazonaws.com		1
Shappings     Description     Status Checks     Monitoring     Tags            Becription Security Groups           Instance ID           i.octbd9eee9c9bbbee           Public DNS (IPv4)           ec254-160-211-139.compute-         1.amazonaws.com        Elastic IPs          Instance state           running           IPv4 Public IP           54.160-211-139.compute-         1.amazonaws.com	Chonobota			
NETWORK &     SECURITY     Instance ID i-Octbd9eee9c9bbbee     Public DNS (Pv4)     ec2-54-160-211-139.compute-     1.amazonaws.com     Instance state     running     IPv4 Public IP     54.160.211.139	anapsnuts	Description Status Checks Monitoring Tags		
SECURITY     Instance ID     i-Octhd9see9c9bbbee     Public DNS (IPv4)     ec.264 t60.211-139.compute- 1.amazonaws.com       Security Groups     Instance state     running     IPv4 Public IDV     6.160.211.139	NETWORK &			
Security Groups  Instance state running IP4 Public IP 54.160.211.139  Instance state running IP4 Public IP 54.160.211.139	SECURITY	Instance ID i-Ocfbd9eee9c9bbbee Public DNS (IPv4) ec2-54-160-211-139.compute-		
Elastic IPs Instance state running IPv4 Public IP 54.160.211.139	Security Groups	1.amazonaws.com		
	Elastic IPs	Instance state running IPv4 Public IP 54.160.211.139		-
				-

• **Numbers of Services**: The maximum number of service instances allowed for deploying PowerServer under the current AWS account. Simply specify a number in the AEM page.

# Figure 5.32: Instance name

# 5.3.4.1.2 Re-activation

Each copy of PowerServer can only be activated on one machine. If you want to activate a PowerServer on a different machine, you would need to de-activate PowerServer on the previous machine first and then activate it on the new machine, by following the instructions below.

Step 1: De-activate PowerServer on the previous machine.

1. Click the **De-Activate** button in the **Licensing** page.

Licensing	
You are entitled to the following product features.	Each copy of Appeon Server could be activated on a specific machine only.
Product Information	
Product Edition:	DEVELOPER (Appeon)
Product Version:	6.6.0077.00 32-bit Edition
Operating System:	Windows 7
Application Server:	.NET
Mobile Activation Information	
Mobile Product Key:	8
Maximum Mobile Devices:	10
Other Activation Information	
Server ID:	MCNGMC00RC1BMi0yQS0wQi1GOXwwMC01MC01Ni1DMC0wMC0wMXwwMC01MC01Ni1DMC0wMC0wOA==
Activation Status:	ACTIVATED
Days Remaining:	*
Activation Date:	12/01/2012
Features Licensed	
Clustering Option:	No
Offline Option:	Yes
Number of CPUs Licensed:	1
Number of Cores Per CPU:	*
Type of CPU Licensed:	Physics
Activate De-Activate Upgrade License	

Figure 5.33: License deactivation

2. You will be prompted by two sequential messages to confirm whether you want to deactivate PowerServer on this machine. **IMPORTANT**: Please be cautious with this action, as it is irreversible, and once you click **OK**, the license file will become invalid and can no longer be installed on this machine unless it is re-generated. Click **OK** to continue if you are sure to de-activate this PowerServer.

#### Figure 5.34: Product De-activate

e	Product De-activate Webpage Dialog
	Once you de-activate your software, it will continue to operate for a 30-day grace period and thereafter cease to operate. You must de-activate your software if you wish to activate it on a machine.
	OK

#### Figure 5.35: Confirm De-activation

🔊 Confirm De-activation? Webpage Dialog
De-activating your software will cause your software to no longer operate on this machine (after 30-day grace period). Are you sure you want to de-activate your software?
OK

3. Click the **Download File** button to download the file whose name is license.reactivation.bin by default.



	AEM Console > Server > Licensing > De-activate License
=	
	De-activate License
	Your license was successfully de-activated. To make sure this Appeon Server stably runs for another 30 grace days, you must restart the server. Please download the de-activated license file from license.reactivate.bin and store in a safe place. You must provide Appeon with the de-activated license together with information about the new machine in order to re-activate the software. If any questions about the re-activation process please email license@appeon.com.
	Download File

Step 2: Generate the activation request for PowerServer on the new machine.

Follow the steps in <u>Generate the activation request</u> to get the license.activation.bin file and save it in a safe place.

Step 3: Email Appeon to generate the license file for the new server.

You should send both the license.reactivation.bin file and the license.activation.bin file to <license@appeon.com> to apply a reactivated license for the new server.

Step 4: Install the license on the new server.

Appeon will process the reactivation request and send you a valid reactivated license file (license.appeon). You need to install this license file on the new server. For detailed instructions, please refer to <u>Install the permanent license file</u>.

# 5.3.4.1.3 Upgrade license

Step 1: On the **Licensing** page, click the **Upgrade License** button.

Step 2: On the Upgrade License page, input the information for upgrading the license.

## Figure 5.37: Upgrade license

pgrade License	
To upgrade the license, please e or an asterisk and the asterisk in	enter an appropriate value in the corresponding items. The value must be a positive integer dicates it is unlimited.
Product Key Type:	Appeon Mobile 👻
Control Type:	Session/Device -
Mobile Product Key:	APFA-DEWN-EAEN-UNAP-GGEE-EEEE-FQHS
Maximum Mobile Devices:	
Number of CPUs Licensed:	*
Order Date:	07/20/2012
Expiration Date:	07/20/2013
Renew Time:	0 year(s)
IsVMWare:	
Support Offline:	

# Step 3: Click the Generate License Upgrade Application button.

Step 4: Click the **Download File** button to download the request file which is by default named as license.update.bin and send it to <license@appeon.com>. The request will be processed in Appeon and an upgraded license will be sent to you later.

Figure 5.38: Download license upgrade request

	AEM Console > Server > Product Activation > Licensing > Upgrade License > Download License Upgrade Application
Ξ	Download License Upgrade Application
	Download the application file and store it in a safe place. Then send the application file to <u>license@appeon.com</u> .
	Download File

Step 5: After receiving the upgraded license from Appeon, click the **Apply License** button in the **Upgrade License** page.

Step 6: Click the **Browse...** button and select the license.appeon file. Click the **Import** button to import the license file. Please make sure the license file is imported successfully, and then restart PowerServer.

#### Figure 5.39: Apply license

	<u>AEM Console</u> > <u>Server</u> > <u>Product Activation</u> > <u>Licensing</u> > Apply License
F	
	Apply License
	Click Browse and find the license file from the specified directory, then click Import to upload the license file. Restart the Appeon server to activate the license.
	License File: Browse
	Import

Step 7: After you restart PowerServer, go back to the **Licensing** page, and verify that the license information is updated, and the **Activation Status** is shown as **Activated**.

#### 5.3.4.2 Support

The Support tool enables you to view the valid product support period, which starts from the day you place the product order and expires in 1 year later. You can renew the support before or after the license expires, and apply the renewed license to extend the support period. **Renew Support** and **Apply License** will be enabled when the product is activated.

#### Figure 5.40: Support

AEM Console	Welcome > Server > Product Activation > Support
Welcome	Product Support
Logging     E-Resources     Product Activation	Order Date: N/A Expiration Date: N/A
Licensing	Days Remaining: N/A
E - Server Security     Application     Mobile UI Resizing	Renew Support Apply License

#### 5.3.4.2.1 Renew Support

Support Expiration will not affect the normal running of Appeon. However, after the expiration you are no longer entitled to install product upgrades/EBFs or get technical support assistance from Appeon. You can renew your product support prior to the expiration date to ensure you are benefiting from the latest product enhancements, maintenance releases and the technical support assistance.

If you want to extend the Support, follow the steps below:

Step 1 - Click the **Renew Support** button. In the **Renew Support** page, enter the time you want to extend, which should only be an integer. Click the **Generate Renew Request** button. Note: The order date is counted from the first date when your last license expired.

#### Figure 5.41: Renew support

Re	new Support		
The	e new support service period is	calculated from the last support end-date.	
Re	new Time:	1 year(s)	
Or	der Date:	01/01/2013	
Ex	piration Date:	01/01/2014	
Is\	/MWare:		

Step 2 - Click the **Download File** button to download the request file which is by default named as license.support.bin and send it to <license@appeon.com>. The request will be processed in Appeon and a new license with extended support period will be sent to you later.





Step 3 - When you get the new license named license.appeon, click the **Apply License** button.

Figure 5.43: Product support

AEM Console	Welcome > Server > Product Activation > Support
← Welcome ^	Product Support
Elogging Resources	Order Date:         N/A           Expiration Date:         N/A
Licensing Support	Days Remaining: N/A
Server Security     Application     Mobile UI Resizing	Renew Support Apply License

Step 4 - In the **Apply License** window, click the **Browse...** button to select the license.appeon file delivered by Appeon. Click the **Import** button to import your license file.

Figure 5.44: Apply license for support

	Env console > Server > Product Activation > Licensing > Apply License
Ξ.	
A -	Apply License
L	License File: Browse
	Impat

Step 5 - Restart PowerServer after importing the license file, and go back to the **Support** page to ensure the support is correctly extended.

# 5.3.5 Server Security

Server Security is a set of tools for viewing and modifying all the security on the server side and prevents unauthorized access to the Appeon Web application or the Appeon mobile application using an existing LDAP installation or Appeon's built-in application security. There are five tools: AEM Login, User Management, Group Management, System Security, and Deployment Security.

AEM Console		Welcome > Server > Server Security				
r™ Welcome ^ □···· Server	A	Server Security				
Logging		Contains AEM login, user management, group management, system security, and deployment security settings.				
Resources     Product Activation     Server Security     AEM Login     User Management     Group Management     System Security     Deployment Security     We security		AEM Login	Changes the administrator user name and/or password that is used to log in to AEM.			
		User Management	Defines and manages user accounts. For non-LDAP systems only.			
		Group Management	Defines and manages security groups including user assignments. For non-LDAP systems only.			
		System Security	Sets the system security mode, security type, and LDAP interface settings (if using LDAP).			
	«	Deployment Security	Enables or disables security on every Appeon application and assigns access rights to the security groups defined in LDAP or the Group Management of AEM.			

## Figure 5.45: Server Security

# 5.3.5.1 AEM login

The user can change the default or current username and password to log in to AEM.

Figure 5.46: AEM Login

AEM Console		<u>Welcome</u> > <u>Server</u> > <u>Server Security</u> > AEM Login
Welcome	` E	Change AEM Password
Jessinis     Logging     Product Activation     Sever Security <u>AEMLogin     User Management     System Security     Deployment Security     Deployment Security     Deployment Security     Deployment Security     Deployment Security     Deployment Security </u>		Once you have successfully changed your password, you will need to use your new password and the existing user name the next time you log in to AEM.
		Old password:
		New password:
		Confirm Password:
		Change
	E	Change AEM User Name
		Once you have successfully changed your user name, you will need to use your new user name and the existing password the next time you log in to AEM.
*		Old user name:
Description		New user name:
Changes the administrator user name and/or password that is used to log in to AEM.		Confirm user name:
		Change

# 1) Change AEM Password

The new password will overwrite the user's existing password, but the existing username will be used to login. In order to successfully change the password, the user must enter information in the following fields:

- Old password Correctly enter the current password (case sensitive).
- New password Enter a new password to replace the old password (case sensitive).
- Confirm password Retype the new password. The value entered in this field must match the 'New password' field (case sensitive).

# 2) Change AEM Username

The new username will overwrite the user's existing username, but the existing password will be used to login. In order to successfully change the username, the user must enter information in the following fields:

- Old username Correctly enter the current username (case sensitive).
- New username Enter a new username to replace the old username (case sensitive).
- Confirm username Retype the new username. The value entered in this field must match the New username field (case sensitive)

Note that if this is the first time you are using this AEM Login tool, the old username and password are those you specified when installing the PowerServer. If you did not specify the username and password during the installation, the old user name and password are both "admin" by default. For security purposes, Appeon recommends that you change the username and password after the initial login.

#### 5.3.5.2 User Management

The User Management tool in AEM can be used to manage two types of users:

- 1. user accounts for all Appeon applications including Web apps and mobile apps
- 2. Appeon Workspace clients for the Appeon mobile application running in Appeon Workspace

You can create, edit and remove users in this tool. After you create the user, you can assign the users to groups in the <u>Group Management</u> tool.

AEM Console		Welcome > <u>Server</u> > <u>Server</u>	<u>security</u> > User M	anagement		
Welcome     Server     Server     Generation     Sessions     Logging     Resources     Froduct Activation     Generation     Server Security     AEM Login     User Management     System Security     Deployment Security     Deployment Security		User Management The User Management functional configurations. If the Security Tog take effect. Search for User Name Actions Add User	ity is a feature of Appeon gle is set to Off or if the S contains User Name	<sup>i's</sup> built-in application se Security Type is set to LE Full Name	curity system. It is inten AP Security in the Syste Exact search Filter Account Status	ded for non-LDAP security m Security, these settings will not Show All Description
	E	Appeon Workspace Client (Mo	bile Only)			
		Configures the Appeon Workspac	e client. The Appeon Wo	orkspace client will need	to be assigned to the A	ppeon Workspace group later.
		Search for Client ID 🔹	contains	Ð	act search Filter	Show All
		Actions	Client ID	Client Name	Client Status	Description
*		Add Client				
Description						

#### Figure 5.47: User Management

#### 5.3.5.2.1 User Management

If the security type is Appeon security, you can use the User Management tool of AEM to set up user accounts. This feature is not applicable to LDAP systems. For LDAP systems, use LDAP to add or remove security groups.

On the User Management page, you can view which users are currently in the system and whether their accounts are enabled or disabled. By default, all existing users are displayed.

User names and associated user information can be viewed in the following two ways:

- 1. Click the **Show All** button to display all users.
- 2. Specify filter criteria to view users:

Step 1: Select **User name**, **Full Name**, **Account Status**, or **Description** in the dropdown list as the type of filter criteria.

Step 2: Enter the contents that are expected to be included in the item specified in the dropdown list.

Step 3: Enable or disable the "Exact search".

Step 4: Click the **Filter** button. Users that meet the criteria will be displayed.

#### Adding a new user

If you want to add one or more users, click the **Add User** button on the **User Management** page and the **Add User** page will be displayed.

#### Figure 5.48: Add a user

User Account				
The user you are adding w	ill not be able to log in to the Appeon	application until the user has been	assigned to at least one group.	
User Name:				
Full Name:				
Description:			*	
			-	
Password:				
Confirm Password:				
	Account is disabled			

- Username -- The user identifier. This field is required. Chinese characters are unsupported.
- Full name -- The full name of the user. This field is optional. Chinese characters are unsupported.
- Description -- Any appropriate user information. This field is optional.
- Password -- The password of the new user. This field is required.
- Confirm password -- The user must enter the new password again to confirm the password. This field is required.
- Account is disabled -- If this checkbox is checked, the user account is disabled.

When the account status is disabled, the user cannot load any application with the username and password if the application requires user authentication.

When the account status is enabled, the user can load an application with the username and password if the account is assigned to a group that is in turn assigned to the application (with application access status enabled).

#### Editing an existing user

By clicking the **Edit** button on the **User Management** page, you can enter the **Edit User** page to edit an existing User.

#### Figure 5.49: Add a user

Į	<u>Nelcome</u> > <u>Server</u> > <u>Se</u>	erver Security > <u>User Management</u> > Edit User
	Edit User Account	
	The user you are adding wi	I not be able to log in to the Appeon application until the user has been assigned to at least one group.
	User Name: Full Name:	Appeon Test admin
	Description:	AppeonTest
	Deserved	
	Password: Confirm Password:	
		Account is disabled
	Save	

The Edit User is similar to the Add User page except that the user name is not editable. You can modify the full name, the description, or change the password or account status in the same way as you were instructed in <u>Adding a new user</u>.

After making any changes, click the Save button. The changes are updated in PowerServer.

#### Deleting a user

Delete a user by clicking the **Delete** button on the **User Management** page. A message box will prompt you to confirm the action.

Click the **OK** button to confirm the deletion or the **Cancel** button to cancel the deletion.

# 5.3.5.2.2 Appeon Workspace Client (Mobile only)

Appeon Workspace Client is intended for security configurations for mobile applications. It works along with Appeon Workspace Group to add extra security to your Appeon Workspace applications.

#### **Viewing Appeon Workspace clients**

In the **Appeon Workspace Client** table on the **User Management** page, you can view all the existing clients and associated client information in the system. And you can view them in the following two ways. By default, all the existing clients are displayed.

- 1. Click the **Show All** button to display all the clients.
- 2. Specify a filter criteria to view certain clients:

Step 1: Select **Client ID**, **Client Name**, **Client Status**, or **Description** from the **Search Field** dropdown list box.

Step 2: Type your relevant keywords in the keyword text box.

Step 3: Enable or disable the **Exact Search** check box.

Step 4: Click Search. Clients that meet the criteria will be displayed.

## Adding an Appeon Workspace client

To add an new Appeon Workspace client:

Step 1: Click Add Client in the Appeon Workspace Client table.

Step 2: On the **Appeon Workspace Client ID** page that displays, type a client ID in the **Client ID** text box; enter a client name in the **Client Name** text box; and then enter some descriptions for the client in the **Description** text box.

## Figure 5.50: Add Appeon Workspace Client

3	Add Appeon Workspace Client Information					
	The client you are a one Appeon Works	adding has no access to the applications deployed to this server until the client has been assigned to at least space group.				
	Client ID:					
	Client Name:					
	Description:	* •				
		This Appeon Workspace Client is Disabled				

Step 3: (Optional) If you want to disable the Appeon Workspace client so that it cannot access any Appeon mobile application on this PowerServer, select the **This Appeon Workspace Client is Disabled** checkbox.

Detailed configuration descriptions are shown in the following table.

Table 5.1: Add Appeon	Workspace	Client	Items
-----------------------	-----------	--------	-------

Items	Descriptions
Client ID	The unique identifier to identify the mobile device. It must be the same value as the Appeon Workspace ID which can be obtained from the <b>About</b> window of <b>Appeon Workspace</b> . See the Appeon Workspace User Guide for details.
Client Name	The display name of the mobile client. It can be any text you like.
Description	Any other information for this mobile client. This field is optional.
This Appeon Workspace Client is Disabled	The client's accessbility to the Appeon mobile application on this PowerServer.

Items	Descriptions
	You can select this checkbox to disable the client account, instead of
	deleting it. The disabled client cannot access any mobile application on this
	PowerServer.

Step 4: Click the **Save** button to add the client, or click **Save and Add** to save the client and begin to add another one.

# Editing an Appeon Workspace client

To edit an Appeon Workspace client:

Step 1: In the **Appeon Workspace Client** table, click the **Edit** button associated with an Appeon Workspace client ID, and then make the changes you intend to.

You can only change the Appeon Workspace client name and description, and/or you can also enable or disable a client by selecting or deselecting the **This Appeon Workspace Client is Disabled** checkbox.

## Figure 5.51: Edit Appeon Workspace Client

Appeon Workspace Client (Mobile Only)									
Configures the Appeon Workspace client. The Appeon Workspace client will need to be assigned to the Appeon Workspace group later.									
Search for Client ID	▼ contains	Exact search Filter Show All							
	Total: 7 Record(s)								
Actions	Client ID	ClientName	Client Status	Description					
Belete	000062D957F6627E02B0454F0000410C	000062D957F6627E02B0454F0000410C	Enabled	Automatically registered client.					
📴 Edit 🖹 Delete	00006CE85E6010237D320BF100002539	00006CE85E6010237D320BF100002539	Enabled	Automatically registered client.					
👺 Edit 🖹 Delete	000077F82E33532E4510214A00007570	000077F82E33532E4510214A00007570	Enabled	Automatically registered client.					
Belete	000079110CD137000FE225D600002279	000079110CD137000FE225D600002279	Enabled	Automatically registered client.					
📴 Edit 🖹 Delete	85CD096E5DFA412EAF9F97E491A1EFFD	85CD096E5DFA412EAF9F97E491A1EFFD	Enabled	Automatically registered client.					
📴 Edit 🖄 Delete	8E0D0354637E423A93BB09E2C9C5A608	8E0D0354637E423A93BB09E2C9C5A608	Enabled	Automatically registered client.					
📴 Edit 🖹 Delete	969F84D809C143319CBAAFB14BFDB02C	969F84D809C143319CBAAFB14BFDB02C	Enabled	Automatically registered client.					
Add Client									

Step 2: Click **Save** to save the changes.

#### Deleting an Appeon Workspace client

To delete an Appeon Workspace client, click the **Delete** button associated with an Appeon Workspace client ID in the **Appeon Workspace Client** table, and click **OK** to confirm the deletion in the popup dialog box.

You can only delete the Appeon Workspace client one by one.

#### 5.3.5.3 Group Management

The **Group Management** tool in AEM is used to manage user groups and Appeon Workspace groups.

AEM Console	Ī	<u> Welcome &gt; Server &gt; Server</u>	<u>Security</u> > Group I	Management	
Welcome     Server     Sessions     Logging     Resources     Product Activation     Server Security     AEM Login     User Management     System Security     Deployment Security     Deployment Security     Deployment Security     Deployment Security     Mobile UI Resizing		Group Management The Group Management functiona configurations. If the Security Tog take effect. Search for Group Name  Actions Add Group	lity is a feature of Appeo gle is set to Off or if the S contains Group Name	n's built-in application s Security Type is set to LD Users Assigned	ecurity system. It is intended for non-LDAP security AP Security in the System Security, these settings will not Exact search Filter Show All Description
	« 🗖	Appeon Workspace Group (M	obile Only)		
	4	Configures the Appeon Workspac later.	e group. The Appeon Wo	orkspace group will nee	d to be granted with access rights to the mobile application
		Search for Group Name -	contains		Exact search Filter Show All
		Actions	Group Name	Numbers Assigned	Description
*					
Description		Add Group			

## Figure 5.52: Group Management

# 5.3.5.3.1 Group Management

If the security type is Appeon security, you can use the Group Management tool of AEM to set up various security groups and assign user accounts to the groups. This feature is not applicable to LDAP systems. For LDAP systems, use LDAP to add or remove security groups.

## **Viewing groups**

The group information and associated user information can be viewed in the following two ways:

- 1. Click the **Show All** button to display all the groups.
- 2. Specify filter criteria to view groups:

Step 1: Select Group or Description in the dropdown list as the type of the filter criteria.

Step 2: Enter the contents that are expected to be included in the item specified in the dropdown list. Based on the criteria, groups that contain the specified information will be displayed.

Step 3: Enable or disable the **Exact search**.

Step 4: Click the **Filter** button and the groups that meet the criteria will be displayed.

#### Adding a new group

To add one or more groups, click the **Add Group** button in the **Group Management** table and the **Add Group** page will be displayed.

## Figure 5.53: Add a group

1	AEM Console > Server	> <u>Server Security</u> > <u>Group Manageme</u>	ent > Add Group						
Ξ									
	ad Group								
	inputs the detailed inform	ipus uie detailed monitation about uns new group.							
	Group Name:								
	Group Description:								
	Assign users to this group.	sers to this group. All of the users configured in the User Management tool will be listed.							
		Unassigned Users		Assigned Users					
			>>> <<<						
	Save and Add	Save							

- Group name The group identifier. This field is required. Chinese characters are unsupported.
- Group description Some explanation about the group. This field is optional.
- Assign or unassign users to the group.
  - 1. To assign a user to the group

Select a user from the **Unassigned Users** list. Click the forward button to shift the user to the **Assigned Users** list.

By default, all the users are listed in the **Unassigned Users** list. The users are configured in the <u>User Management</u> tool.

2. To unassign a user from the group

Select a user from the **Assigned Users** list by clicking it. Click the back button to shift the user to the **Unassigned Users** list.

# Editing an existing group

To edit a specific group, click the **Edit** button in the **Group Management** page and enter the **Edit Group** page.

The **Edit Group** page is similar to the **Add Group** page except that the group name is not editable. You can modify the group description, or assign (unassign) users to the group in the same way as instructed in <u>Adding a new group</u>.

# Deleting a group

Delete a group by clicking the **Delete** button in the **Group Management** page. A message box will prompt you to confirm the action.

Click the **OK** button to confirm the deletion or the **Cancel** button to cancel the deletion.

#### 5.3.5.3.2 Appeon Workspace Group

Appeon Workspace Group is intended for security configurations for mobile applications.

#### Viewing Appeon Workspace user groups

In the **Appeon Workspace Group** table, you can view all the groups and associated group information in the system. And you can view them in the following two ways. By default, all the existing groups are displayed.

- 1. Click the **Show All** button to display all the groups.
- 2. Specify a filter criteria to view certain groups:

Step 1: Select Group Name or Description from the Search Field dropdown list box.

Step 2: Type your relevant keywords in the keyword text box.

Step 3: Enable or disable the Exact Search check box.

Step 4: Click Search. Groups that meet the criteria will be displayed.

#### Adding an Appeon Workspace group

To add a new Appeon Workspace group:

Step 1: In the Appeon Workspace Group table, click Add Group.

#### Figure 5.54: Add Appeon Workspace Group

Welcome > Server > Server Security > Group Managem	ent > Add Appeon Workspace Group				
Add Appeon Workspace Group	Add Appeon Workspace Group				
Input the detailed information about this new Appeon Workspace g	roup.				
Group Name:					
Group Description:					
Assign the Appeon Workspace clients to this group. All of the $\ensuremath{Appe}$ will be listed.	on Workspace clients configured in the Appeon Workspace Clients tool				
Unassigned Appeon Workspace Clients	Assigned Appeon Workspace Clients				
APPEONTEST	A				
	>>				
	<<				
Save and Add Save					

Step 2: On the Add Appeon Workspace Group page that displays, type a group name in the Group Name text box, and then enter a description in the Group Description text box.

Step 3: Assign users into the **Assigned Appeon Workspace Clients** group by selecting a client name from the **Unassigned Appeon Workspace Clients** list box and then clicking the

forward \_\_\_\_\_\_ icon. You can create clients in the <u>Appeon Workspace Client</u> tool.

Step 4: Click the **Save** button to save the group, or click **Save and Add** to save the group and begin to add another one.

## Editing an Appeon Workspace Group

To edit an Appeon Workspace Group:

Step 1: In the **Appeon Workspace Group** table, click the **Edit** button associated with an Appeon Workspace group, and then make the changes you intend to.

## Figure 5.55: Appeon Workspace Group

Appeon Workspace	Appeon Workspace Group (Mobile Only)				
Configures the Appe later.	Configures the Appeon Workspace group. The Appeon Workspace group will need to be granted with access rights to the mobile application later.				
Search for Grou	Search for Group Name  contains Exact search Filter Show All			Show All	
	Total: 1 Record(s)			Record(s)	
Actions		Group Name	Numbers Assigned	Description	
🚱 Edit 🛛 🖹 (	Delete	AppeonTest	1	AppeonTest	
Add Group	Add Group				

You can only change the descriptions and assign new users into the group or delete assigned users from the group, as showing in the following figure.

Figure 5.56: Edit Appeon Workspace Group

Ī	<u> Nelcome</u> > <u>Server</u> > <u>Se</u>	rver Security > Group Mana	<u>gement</u> > Edi	t Appeon Workspace Group		
	∃ Edit Appeon Workspace Group					
Input the detailed information about this new Appeon Workspace group.						
	Group Name: AppeonTest					
	Group Description:	AppeonTest			6	
	Assign the Appeon Worksp will be listed.	ace clients to this group. All of the	Appeon Worksp	ace clients configured in the Appeo	on Workspace Clients tool	
	Unassigned App	eon Workspace Clients		Assigned Appeon Work	space Clients	
		× •	>>>	APPEONTEST	A 	
	Save					

Step 2: Click **Save** to save the changes.

## **Deleting an Appeon Workspace Group**

To delete an Appeon Workspace Group, click the **Delete** button associated with an Appeon Workspace group in the **Appeon Workspace Group** table, and then click **OK** to confirm the deletion in the popup dialog box.

You can only delete the Appeon Workspace Group one by one.

# 5.3.5.4 User and Group Management at LDAP server side

Managing users and groups "at the LDAP server side" means that the administrator adds/ removes/modifies users and groups in the LDAP/LDAPS server rather than in the user management and group management of AEM. The following are the steps to perform LDAP/ LDAPS user and group management:

1. Set up the LDAP/LDAPS server in the system

Refer to the documentation supplied by the LDAP/LDAPS server vendor for installation and setup instructions for your LDAP/LDAPS server.

2. Create an organization unit in the LDAP server.

Only a single organization unit can be used to host all the groups and users for the Appeon Web application or the Appeon mobile application.

3. Create/manage users and groups in the organization unit in accordance with the LDAP/ LDAPS server documentation.

#### 5.3.5.5 System Security

## Figure 5.57: System Security

As the above figure illustrates, the System Security covers three important settings:

• Security Toggle -- Turns application security on and off at the system level. All application security and settings in <u>Client Security</u> are ignored when set to off, but the settings will not be lost.

- Security Type -- Determines which system, Appeon built-in system or LDAP server, is applied to implement the security feature. Note that the Group Management and User Management tools only work with the Appeon built-in system.
- LDAP Interface Settings -- If you are using LDAP server, the user must configure LDAP interface settings to connect the LDAP server with PowerServer.

# 5.3.5.5.1 Security Toggle and Security Type

The following table shows how the Security Toggle and Security Type settings determine which security tools are applied and what security features are performed.

Security Toggle	Security Type	Settings in Security	Security Feature
Off	Not Available	Not Available	Disabled. Unauthorized users have access to load or deploy applications.
On	Appeon Security	User Management Group Management Client Security Deployment Security	The Appeon built-in security is enabled. Only authorized groups and users of a deployed application are allowed to load or deploy the application. Three consecutive invalid logins will result in an exceptional exit of the login dialog from the application. In this case, the user can click the <i>Refresh</i> button to obtain the login dialog again and re- log in with the correct username and password.
	LDAP Security	LDAP Interface Settings Client Security Deployment Security	Enabled. Any authorized LDAP groups and users of an application are allowed to load or deploy the application. Three consecutive invalid logins will result in an exceptional exit of the login dialog from the application. In this case, the user can click the <b>Refresh</b> button to obtain the login dialog again and re-log in with the correct username and password.

 Table 5.2: Security toggle, Security type and Security Settings

- Appeon security and LDAP security provides the user with options of using PowerServer or LDAP to assign groups to the application. The security groups will be read from either LDAP (if it is LDAP security) or PowerServer (if it is Appeon security).
- When the user attempts to change the security type, a message box will prompt the user to confirm the change.

# 5.3.5.5.2 LDAP Interface Settings

If you are using the LDAP security, you must perform additional steps to access and manage the user/group information.

# Limitations

There are several limitations about using LDAP with PowerServer:

- 1. One PowerServer can be configured with only one LDAP domain, which means, all the users and groups must be in a single domain.
- 2. Only the "Security" type of LDAP Group is supported, not the "Distribution" type.
- 3. Only "User logon name" (not the "Display name") can be used in the LDAP Logon Dialog when running the application.

For detailed information, please refer to the Appeon LDAP Security Configuration Guide at <u>http://support.appeon.com/index.php?/Knowledgebase/Article/View/22/0/appeon-ldap-security-configuration-guide/</u>.

# LDAP Interface Settings in AEM

To access the user and group information on your LDAP server, it is necessary to provide the LDAP interface settings in AEM. AEM interfaces with the LDAP server every time it opens the page that displays the users and groups information stored in the server.

All the fields in the LDAP Interface Settings group box are required:

- LDAP host -- The IP address or domain name of the LDAP Server.
- LDAP port -- Port of the LDAP Server.
- LDAP DN -- The distinguished name uniquely identifies the LDAP directory.

If using Netscape LDAP or Sun LDAP, the LDAP DN should be "ou=*AAA*, o=*BBB*", where *AAA* stands for the organization unit in which all the groups are created, and *BBB* stands for the domain name.

For Microsoft LDAP, the LDAP DN should be "DC=AAA, DC=BBB, (DC=CCC)", where AAA stands for the domain component (DC) that contains all the groups, and BBB stands for the domain component that contains the AAA component.

If using IBM LDAP, the LDAP DN should be "o=AAA, c=BBB", where AAA stands for the organization suffix, and BBB stands for the country.

• LDAP type -- Type of the LDAP server.

There are four options (the LDAP servers that Appeon supports): Netscape LDAP, Sun LDAP, Microsoft LDAP, and IBM LDAP.

LDAP types	Requirements
Netscape LDAP	Netscape LDAP 4.2 or above
Sun LDAP	Sun LDAP 5.1 (Sun LDAP is very similar to Netscape LDAP)
Microsoft LDAP	Windows 2000, 2003, & 2008 Active Directory
IBM LDAP	Directory Services (LDAP) 5.1

#### Table 5.3: Supported LDAP types

• Admin username -- The administrator username.

If using Microsoft LDAP, the username should be the username for the domain of the LDAP (The username has access rights to the specified LDAP domain component).

- Admin password -- The administrator password.
- Use SSL -- If Yes is selected, the communication between PowerServer and LDAP Server will use LDAPS protocol. You need to provide the Certificate Authenticated file of LDAPS. If No is selected, the communication between PowerServer and LDAP server will use LDAP protocol.
- Certificate File -- The Certificate authenticated file of LDAPS.

After all the fields are filled, do the following:

- 1. Click the **Test LDAP Settings** button to test whether the settings are correct or not. If the message indicates that the settings are incorrect, continue to verify the settings until the LDAP settings are correct.
- 2. Click the **Save** button.

#### 5.3.5.6 Deployment Security

You can use the Deployment Security tool to manage PowerServer deployment security, which controls what PowerBuilder developers are allowed to deploy applications to PowerServer.

Corresponding to the Deployment Security in AEM, PowerServer Toolkit requires PowerBuilder developers to specify deployment user name and password in the PowerServer profile configuration. If the user name and password of the PowerServer profile does not match the setting in Deployment Security, the PowerServer profile will not take any application deployments.

Figure	5.58:	Deployment	Security
--------	-------	------------	----------

AEM Console	<u>Welcome &gt; Server &gt; Server Security</u> > Deployment Security		
Welcome     Server     By Sessions     Logging     By Resources     By Product Activation     By Rever Security			
	If the Security Type is set to LDAP Security, all user groups configured in LDAP are I Security, all user groups configured in Group Management will be listed below. Unassigned Groups dg Domain Admins Enterprise Admins Group Policy Creator Owners HelpServicesGroup IIS_WPG Schema Admins	isted in the table below. If the Security Type is set to Appeon Assigned Groups	

The Deployment Security tool enables you to do the following:

1. Disable deployment security for PowerServer

Select the **Security Off** radio button in the "Application Deployment Security Settings" group box. When the deployment security is off, the user name and password in the

PowerServer profile will be ignored, and the PowerServer profile will always work for application deployments.

2. Enable deployment security for PowerServer

Step 1: Select the Security On radio button.

Step 2: Select a group from the Unassigned Groups list and click the forward button (">>>") to shift the group to the Assigned Groups list. By doing this, that group obtains the permission to deploy applications to PowerServer. If a user name and password that belongs to the group is specified in the PowerServer profile configuration in PowerServer Toolkit, the profile will work for application deployments. Otherwise, application deployments to the PowerServer profile give an error message "Failed to call methods in PowerServer; cannot find the user..."

By default, all groups are listed in the Unassigned Groups list. The groups are read from the PowerServer (if the security type is Appeon security) or the LDAP server (if the security type is LDAP security) in use. You can use back button ("<<<") to shift the group to the Unassigned Groups list.

# **5.4 Application**

Applications deployed to PowerServer are registered in AEM with their application profile names.

Application are a set of tools for setting the server-related properties for the Appeon Web application or the Appeon mobile application. There are eight tools: Configuration Summary, Transactions, Local Database, PB Features, Web Browser, Client Features, Data Transfer, Performance, and Client Security. The settings for each application profile affect application(s) deployed from the application profile.

AEM Console	<u>Welcome</u> > Application			
™Welcome ⊕∵Server		Application		
Application     Configuration Summary		Configures various settings of the deployed applications.		
Transactions		Configuration Summary	Views all the configurations of each application.	
		Transactions	Contains transaction objects and timeout settings.	
Web Browser		Local Database	Views the local data source on the mobile device.	
		PB Features	Contains PB-related features, such as registry mode, INI files, DLL/OCX files, decimal precision, and Web Service DataWindow.	
⊕-Client Security ⊕-Mobile UI Resizing	Web Browser         Configures various client settings related to the application, for example, application title, graph message mode, start and exit behaviors, client           Client Features         Configures various client settings related to the application, for example application title, graph mode, start and exit behaviors, client storage to the application, for example application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title, graph mode, start and exit behaviors, client storage to the application title,	Web Browser	Configures various client settings related to the user interface and general user experience of the application, for example, application title, graphic theme, application auto update, run mode, error message mode, start and exit behaviors, client storage location.	
		Configures various client settings related to the user interface and general user experience of the application, for example application title, graphic theme, application auto update, run mode, error message mode, start and exit behaviors, client storage location.		
	ч.	Data Transfer	Contains charset and transfer encoding.	
		Performance	Contains multi-thread download, application server cache and DataWindow data cache.	
		Client Security	Contains the security settings for the deployed application and the Appeon Workspace client.	

# Figure 5.59: Application

# 5.4.1 Configuration Summary

The Configuration Summary of applications lists all the deployed applications and their configuration summaries.

AEM Console		Welcome > Applicatio	<u>n</u> > Configuration Summary			
Welcome  Server  -Application  Configuration Summary	*	Application Configuration	n Summary ns of each application.			
Transactions     ocal Database		Application Name	PowerBuilder Version	Application Size (KB)	DLL Size (KB)	Cache Usage (KB)
BCall Breatures     Web Browser     Client Features     Data Transfer     Performance     Client Security     Mobile UI Resizing		acf	12.5	6364.60	0.00	0.00
		codeexamples	12.5	6667.20	76.00	0.00
		order	12.5	1179.18	0.00	0.00
		sales	12.5	2449.41	0.00	0.00
		sapteched	12.5	3946.03	0.00	0.00
		youhoops	12.5	3169.69	0.00	0.00

# **Figure 5.60: Application Summary**

Click Application Name to sort the applications.

Click on an application to view the summary of the application.

Figure 5	.61:	Application	Configuration	Summary
<u> </u>			0	

1	Velcome > Application > Configuration Summary > [sales]						
E							
	Application Configuration Summary						
	The following lists the configuration and runtime information of the curren	t application.					
	Item	Value					
	Session Number	0					
	Transaction Number	0					
	Application Title	Beta -					
	Transaction Object Number	1					
	Session Timeout	3600					
	Transaction Timeout	120					
	Download Timeout	3600					
	Request Timeout	3600					
	Charset Number	0					
	Application Server Cache	3					
	Application Cache Setting (Server Side)	No					
	Application Cache Setting (Client Side (Browser))	No					
	Install Mode Of DLL/OCX Files	Install automatically without asking user					
	Conflict Resolution Mode Of DLL/OCX Files	Install anyway without asking user					
	Registry Mode	Use Appeon registry emulation					
	Maximum Threads	2					
	INI File Mode Settings	Client-side					
	Run Mode	Normal Mode					
	Encoding	UTF-16LE					

# 5.4.2 Transactions

Transactions is a set of tools for viewing and modifying all the transaction objects and timeout. There are two tools: Transaction Objects and Timeout.

AEM Console		<u>Welcome</u> > <u>Application</u> > Transactions				
	*	Transactions Contains transaction objects and timeout settings.				
		Transaction Objects	Configures the connection caches used by the deployed applications. This configuration must be performed each time a new application is deployed or when the transaction object connection cache has changed.			
				Timeout	Configures timeout settings for deployed applications. Appropriate timeout settings could control the session, enhance the system security, avoid the dead lock, etc.	

# 5.4.2.1 Transaction Objects

A database-driven PowerBuilder application has at least one database connection, which is accomplished with the use of transaction objects. When the PowerBuilder application is deployed, PowerServer handles the database connection using data sources configured in PowerServer rather than transaction objects defined in the PowerBuilder application.

All transaction objects in the PowerBuilder application must be mapped to a correct PowerServer data source. "Correct" means that the data source should be created as a JDBC data source in the application server hosting PowerServer, and it should connect to the same database that the Transaction Object connects to in the application.

There are two types of transaction object to data source mapping methods:

- Dynamic Transaction object to data source mapping via PowerScript
- Static Transaction object to data source mapping in AEM

The dynamic mapping in PowerScript has priority over the static mapping in AEM. This section introduces how to set up the static mapping in AEM. For information about the mapping in PowerScript, refer to Dynamic transaction object to data source mapping.

## 5.4.2.1.1 JDBC requirement for transaction object mappings

PowerServer is based on J2EE architecture and therefore requires JDBC to interface with the database. The JDBC data sources can use any of the following four types of JDBC drivers: JDBC-ODBC Bridge, Native-API/partly Java driver, Net-protocol/all-Java driver, or Native-protocol/all-Java driver.

Refer to <u>Setting up PowerServer data sources</u> for more information on this topic, including recommendations on which JDBC driver to use and instructions for creating data sources.

#### 5.4.2.1.2 Configuring transaction object mappings

When an application is deployed to PowerServer, AEM automatically adds the application profile name into the application list of the Transaction Objects tool.

AEM Console	1	<u>Welcome</u> > <u>Application</u> > <u>Transactions</u> > Transaction Objects					
Welcome Server Configuration Configuration Summary		Transaction Object Settings The transaction objects for each application are configured individually. Please click an application name to view the configuration details or modify the configuration.					
Transaction Objects		Application Name	Number	Transaction Object			
Local Database		acf	1	[sqica]			
PB Features     Web Browser     Client Features		<u>codeexamples</u>	3	[its_sqt,sqlca,its_sql]			
		order	1	[sqica]			
⊞Data Transfer ⊞Performance		sales	1	[sqica]			
Client Security		sapteched	1	[sqica]			
comobile of Resizing		vouhoops	1	[sqlca]			

**Figure 5.63: Applications with transaction objects** 

To view the static transaction object mappings for an application, click the application in the Transaction Objects tool. A new page opens and displays the current transaction mapping(s) for the application.

#### Figure 5.64: Configuring transaction object mappings for an application

Welcome > <u>Application</u> > <u>Transa</u>	ctions > Transac	tion Objects > [order]		
Configure Transaction Object				
Actions Transaction Object Data Source Database Type				
🕼 Update 🛛 🖹 Delete 🖌 Test	sqlca	•	Sybase ASA 7/8/9/10/11/12	
Add Transaction Object				

#### Adding a transaction object mapping

Step 1: Click the **Add Transaction Object** button. The Add Transaction Object page appears.

#### Figure 5.65: Add transaction object

Welcome > Applicati	ion > <u>Transactions</u> > <u>Transaction Objects</u> > <u>Add Transaction Object</u> > [order]
□ Add Transaction Obje	ct
Application Name: Transaction Object: Data Source: Database Type:	order
Save and Add	Save Test Connection

Step 2: Enter the transaction object name in the "**Transaction Object**" field. The transaction object name is case insensitive and is the same as the one used in the original PowerBuilder application.

Step 3: Select the data source from the "**Data Source**" dropdown list. The list displays the data sources created in PowerServer.

Make sure the selected data source connects to the same database that the transaction object connects to. Click **Test Connection** button to test the database connection.

**Note**: For .NET server, the data source is created in the AEM; while for Java server, the data source is created in the server console provided by the corresponding application server.

Step 4: Select the database type from the "Database Type" dropdown list.

Make sure the selected database type is identical to what the transaction object connects to.

Step 5: Double-check the information entered because AEM does not validate user-entered data.

Step 6: Click the **Test Connection** button to test the specified database connection.

Step 7: Click the Save or Save and Add button if testing data source succeeded.

To add more transaction object mappings, repeat the above steps.

#### Modifying an existing transaction object mapping

## 1) To change the data source

For each transaction object, there is a dropdown list in the "Data Source" column. The list box lists the data sources created in PowerServer.

Make sure the selected data source connects to the same database that the transaction object connects to.

You can change the current data source by selecting another from the dropdown list. Click **Test Connection** to verify the database connection is successful and then click **Update** to apply the change.

## 2) To change the database type

If the database the transaction object connects to is changed (for example, if all the data are moved from Oracle to SAP), AEM must be updated.

Change the current database type by selecting a database from the dropdown list in the *Database type* column. Click **Update** to apply the change.

## Deleting an existing transaction object mapping

Clicking the **Delete** button will delete a transaction object mapping. A pop-up message will ask you to confirm deletion.

## 5.4.2.2 Timeout

The Timeout provides configuration for four important functions of PowerServer for the deployed applications:

- When the session will timeout (Session Timeout)
- When the transaction will timeout (Transaction Timeout)
- When the file download will timeout (Download Timeout)
- When the message request will timeout (Request Timeout)

#### **Figure 5.66: Timeout settings**

AEM Console		Welcome > Application > Trans	actions > Tim	eout			
Welcome Server Application Configuration Summary		enhance the system					
Transaction Objects		Application Name	Session (sec)	Transaction (sec)	Download (sec)	Request (sec)	
Local Database		acf	3600	120	3600	3600	
t → PB Features Web Browser		codeexamples	3600	120	3600	3600	
Client Features		order	3600	120	3600	3600	
Data Transfer     Performance     Det Client Security		sales	3600	120	3600	3600	
		sapteched	3600	120	3600	3600	
Emiliobile of Resizing	t.	<u>vouhoops</u>	3600	120	3600	3600	

Click the application name in the **Application Name** column of the table to configure the settings. After making any changes to the configuration, remember to click the **Save** button.

#### **Figure 5.67: Timeout settings**

	<u>Welcome &gt; Application &gt; Transactions &gt; Timeout &gt; [codeexamples]</u>					
⊟	Session Timeout					
	Session timeout ends the user session and rolls back all database updates since the last commit for a user session. Setting the session timeout to "0" will disable this timeout.					
	Session Timeout: 3600 seconds					
⊟	Transaction Timeout					
	Transaction timeout rolls back all database updates since the last commit in a transaction. Setting the transaction timeout to "0" will disable this timeout.					
	Transaction Timeout: 120 seconds					
Ξ	Download Timeout					
	Specifies the timeout value for file downloads. If the time to download exceeds the specified value, the download will abort and an error message will display.					
	Download Timeout: 3600 seconds					
⊟	Request Timeout					
	Specifies the timeout value for receiving response from the server to fulfill a client request. If the time to fulfill the request exceeds the specified value, the response will abort and an error message will display.					
	Request Timeout: 3600 seconds					
	Save					

#### 5.4.2.2.1 Session timeout

A session starts when the user sends a request to load an Appeon application from the server, and ends if the user closes the application or has not sent any requests to the server during the "session timeout" period.

- By default, the timeout period for a session is 3600 seconds. Session Timeout period should be greater than the Transaction Timeout period. Generally speaking, the session timeout period should not be smaller than 3600 seconds.
- You can set a timeout interval that is shorter or longer than the default setting. The session timeout can be removed altogether by setting the timeout value to 0. This is not recommended because it will eventually exhaust system resources unless old sessions are manually cleared out using the Active Sessions functionality of AEM.

#### 5.4.2.2.2 Transaction timeout

Appeon supports COMMIT and ROLLBACK transaction management statements, and provides a "transaction timeout" setting in AEM that can force a transaction to roll back and release database resource.

The transaction timeout can be removed altogether by setting the timeout value to 0; it is recommended that you set the timeout interval to a small non-0 value (1 to 3600), because a small transaction timeout value can prevent:

• Database locking. When an Appeon Web or Appeon mobile application closes abnormally, the active transaction in it can neither commit nor roll back.
• Application locking. If an application is deadlocked, other applications cannot proceed.

The default value is 120 seconds. Transaction Timeout should be less than Session Timeout.

If transaction timeout in the application database is set to 1800 seconds, then Transaction Timeout in AEM should be set to 1810 or larger. If transaction timeout in the application database is not set, then Transaction Timeout in AEM should be set to a number greater than the maximum time needed to execute regular database operations for the application, suppose the most time-consuming table query operation takes 3000 seconds to complete, then Transaction Timeout should be set to 3010 or larger.

# 5.4.2.2.3 Download timeout

Files that are downloaded by the user often include the JS files, Weblibrary.cab package, DLL/OCX files and application files. They may have a considerable size and therefore take a long time to download. If the user has not received any data during the "download timeout" period, AEM will end the download and prompt an error message.

- By default, the timeout period for file download is 3600 seconds.
- You can set a timeout interval shorter or longer than the default setting. It is required to input a whole number within the range from 60 to 7200.

# 5.4.2.2.4 Request timeout

It takes time for each request to receive response from PowerServer especially when the server is busy or the bandwidth is low. Requests will queue a while to get the server response. Set a proper request timeout value regarding to the application and network condition. Request will be aborted if when the time for waiting response exceeds the value that specified here.

- By default, the timeout period for receiving data is 3600 seconds.
- You can set a timeout interval shorter or longer than the default setting. It is required to input a whole number within the range from 60 to 7200.

# 5.4.3 Local Database

Note: This tool is for Web applications only.

In the Local Database tool, you can view the local database settings configured in the Local DB Settings tab in PowerServer Toolkit after the application is deployed. For details, refer to Section 4.2.1.2.6, "Offline Settings" in *PowerServer Toolkit User Guide*.

When an offline application is deployed to the PowerServer, AEM automatically adds the application profile name into the application list of the Local Database tool.

Figure 5.68: Local database

AEM Console		<u>Welcome</u> > <u>Application</u> > Local	Database	
™Welcome ▲	E	LocalDatabase		
Configuration Summary		Views the local data source on the mo	bile device.	
Transactions     Local Database		Application Name	Last Modified Time	
PB Features		sales	2013-09-09 13:27:52	

#### 5.4.3.1 Viewing local database connections for an application

To view the local database connections for an application, click the application name in the **Local Database** table, and the **Local Database Connections** table appears.

You can only view the local database connections. To modify the local database connections for an application, you need to modify them in Local DB Settings in *PowerServer Toolkit User Guide* (in PowerServer Toolkit), and deploy the application again to make the changes take effect.

#### Figure 5.69: Local database connections for an application

1	Welcome > Application > Local Database > [sales]						
	Local Database Conne	ections					
	The local database is configured in Appeon Developer. You can view the configuration here, but cannot modify it. To modify the configuration, you will need to go to Appeon Developer, modify the configuration and deploy the application again.						
	Туре	Data Source/ Transaction Name	Database Type	Database File Name	UserName		
	Transaction	ultralite	Ultralite	en_asa80.udb			

# 5.4.4 PB Features

**PB Features** is a set of tools for viewing and modifying Registry Mode, INI Files, DLL/ OCX Files, Decimal Precision, and Web Service DataWindow.

Figure 5.70: PB Features

AEM Console		Welcome > Applicatio	<u>n</u> > PB Features
I <sup>™</sup> Welcome III-Server III-Application		PB Features	
Configuration Summary		Contains PB-related featu Registry Mode	res, such as registry mode, INI hiles, DLLIOCX hiles, decimal precision, and Web Service DataWindow. Specifies the mode to execute PowerBuilder Registry functions.
PB Features     Registry Mode		INI Files	If the application utilizes any INI files, you may configure how the INI files are deployed or modify the INI file contents by clicking on the appropriate application name below.
		DLL/OCX Files	DLLCOCX files are custom libraries that contain custom user code that is called by Appeon Web applications. Appeon can automatically download and install these files as required. Note: These settings are available for Web applications only.
		Decimal Precision	Selects a proper decimal precision for the Web application. 15-digit Decimal supports numbers with up to 15 digits and offers high performance. It is available for all PowerBuilder developed applications. 28-digit Decimal supports numbers with up to 28 digits but offers lower performance than 15-digit Decimal. 28-digit Decimal is only available for applications developed with PowerBuilder 10.5 or above. It is not recommended to apply 28-digit decimal unless high precision number is necessary.
⊞. Client Security ⊞. Mobile UI Resizing	«	Web Service DataWindow	Configures the Web service URL for Web service DataWindow objects at runtime.

#### 5.4.4.1 Registry Mode

The Registry Mode tool determines whether the Appeon deployed applications would read client machine Windows registry or Appeon emulation registry to execute registry functions.

Note: Mobile applications can only read Appeon emulation registry.

Appeon emulation registry refers to the mock registry file stored in the PowerServer database. It keeps the registry settings users specify when executing RegistrySet. Because it initially has no values, with the Appeon emulation registry method, users must first set values using RegistrySet before reading values with RegistryGet or RegistryValues.

AEM Console		<u>Welcome</u> > <u>Ap</u>	plication > PB Fe	atures > Registry Mode	
Welcome     Server     □-Application    Configuration Summary     ①     Transactions	•	Registry Mode When using Pov Appeon registry	verBuilder registry fur emulation, which em	nctions, Web applications can directly access the client man ulates the Windows registry by storing information by using	chine Windows registry or can use ) browser cookies.
Local Database		Application Nam	e	Registry Mode	
Registry Mode		acf		Use Appeon registry emulation	
NI Files DLL/OCX Files		<u>codeexamples</u>		Use Appeon registry emulation	
Decimal Precision		order		Use Appeon registry emulation	
Web Service DataWindow		sales		Use Appeon registry emulation	
Client Features		sapteched		Use Appeon registry emulation	
⊕ Data Hansler ⊕ Performance		vouhoops		Use Appeon registry emulation	

Figure 5.71: Registry Mode

Click the application name listed in **Registry Mode** table, and then select one registry mode on the page that appears, and then click **Save**.

Figure 5.72: Registry Functions Execution Mode



By default, all the Appeon applications are set to "Use Appeon registry emulation".

Appeon recommends you change the default value to "Use client machine Windows registry" if the application is deployed as a Web application. This option is recommended because it enables the application to directly interact with the client registry, the same as that in PowerBuilder.

Note: for "Client machine Windows registry", 32-bit IE browser and 64-bit IE browser use different registries, even they are on the same machine, which means, if the application runs in a 32-bit IE and a 64-bit IE separately on the same machine, it reads different registries, thus uses different registry settings to execute registry functions.

# 5.4.4.2 INI Files

The INI Files tool determines whether the Appeon deployed applications would download XML files that emulate INI files to the clients for profile functions, or directly use the XML files stored in PowerServer database, and it also provides the function to allow you to view and modify the INI file contents of the application.

AEM Console		<u>Welcome &gt; Application &gt; PB F</u>	eatures > INI Files	3
Welcome     Server     Application     Configuration Summary	E	IN I Files If the application utilizes any INI files appropriate application name below	, you may configure ho	ow the INI files are deployed or modify the INI file contents by clicking on the
Local Database PB Features		Application Name	DeploymentMode	
Registry Mode		acf	Client-side	
		<u>codeexamples</u>	Client-side	
Decimal Precision		order	Client-side	
Web Service DataWindow Web Browser		sales	Client-side	
Client Features		sapteched	Client-side	
⊞"Data Transfer ⊞"Performance		youhoops	Client-side	

# Figure 5.73: INI files

#### 5.4.4.2.1 INI File Mode

Note: This part is for Web applications only.

Click the application name in the "Application Name" column of the table to select the deployment mode for the application and view or modify the contents of the INI Files.

#### Figure 5.74: INI file mode settings

	Welcome > <u>Application</u> > <u>PB Features</u> > <u>INI Files</u> > [codeexamples]
⊟	INI File Mode Settings
	If the application utilizes any INI files, you may configure how the INI files are deployed or modify the INI file contents by clicking on the appropriate application name below.
	Deployment Mode: O Server-side O Client-side Auto-download
	Save
⊟	INI Files
	Click an INI file name to View/Edit your application's INI files.
	<u>pblab80.ini</u> appeon code examples.ini

In the server-side manipulations mode, the PowerServer database creates an XML file for each application client, and differentiates the XML files for different clients with the client cookie information.

In the client-side manipulations mode, the XML file that stores the client profile information is kept:

- 1. in the %Windows%\system32\AppeonINI\ directory at the client side, if you have selected the **Default User Profile Location** or the **Browser Cache Folder** option in <u>Client Storage</u> <u>Location</u>.
- 2. in the specified directory, if you have selected **Customized Location** in <u>Client Storage</u> <u>Location</u>.

Select the appropriate mode by balancing the advantages and disadvantages of the two modes:

- A. The "Server-side" mode is supported by the Web application only, while the "Client-side" mode is supported by both the Web application and the mobile application.
- B. The "Server-side" mode requires that the Internet Explorer cookie is enabled at each client, while the "Client-side" mode does not. No matter in which Web browser (IE, Edge, Chrome, Firefox, or Opera) you run the application, you will need to enable the Internet Explorer cookie if you want to support the server-side mode.
- C. The "Server-side" mode does not work with PowerServer cluster. The reason is that the servers in the cluster do not share database information (such as the INI/XML files). The "client-side" can work well with PowerServer cluster.

D. The "Server-side" mode keeps the confidential profile information in PowerServer database. It is securer than the "Client-side" mode, which stores the profile information in the client computer.

There are two file-downloading methods in the "Client-side" mode for downloading the XML files to the clients:

- Auto-download: Default. The XML file is automatically downloaded to the client that executes the relevant profile information.
- Validation: The Web browser would prompt for the user's validation before it downloads the XML file for executing relevant profile function.

Notes:

- 1. AEM does not allow the user to dynamically create an INI file on the local machine. Instead, AEM transfers the INI file from PowerBuilder into an XML file and allows the user to manipulate the XML file on the local machine. The INI file is transferred by PowerServer Toolkit during the parsing process and deployed to PowerServer (for how to deploy INI files, see Deploy INI Files in *PowerServer Toolkit User Guide*).
- 2. When the "Client-side" mode is selected, the XML file will be downloaded to the local machine at the first time that the user manipulates the INI file. However, note that the INI file after downloaded to the local machine will be named differently and placed in a folder different than the application folder, therefore, it is not recommended to use the FileExists PowerScript function to determine whether the INI file exists. You should remove the FileExists function that checks any INI file to avoid errors when running the Web application.

Click the Save button to save changes.

# 5.4.4.2.2 INI Files

The INI file content tool allows you to view and edit the INI files after the deployment by clicking the name of INI file that you need to view or edit. You need to keep the INI content format here consistent with that in the PowerBuilder.

# Figure 5.75: INI files

```
      INI Files

      Click an INI file name to View/Edit your application's INI files.

      pblab80.ini

      appeon_code_examples.inj
```

Click a file name of INI file to view or edit its content.

# Figure 5.76: INI file content

Welcome > Application > PB Features > [NI Files > [codeexamples] > [appeon\_code\_examples.ini]
INI File Content
NI file must be edit exactly same as the way you edit in PowerBuilder. Please note that all the relative values previously modified by end-users
will lose if you modified any value and save it.
[[database]
dbms=ODBC
autocommit=false
dbparm="ConnectString='DSN=AppeonSample;UID=dba; PWD=sql'"
[user info]
name=James Smith
jobtile=Window Washer
user id=1002
security=9
Save

After making any change to the INI file, click the **Save** button, and then the content in the INI file will be automatically commit to Appeondb.

Note

- 1. If the <u>Registry Mode</u> of the ini-modified application is set to "use Appeon registry emulation", the information of Appeon registry emulation will be cleaned up after the INI modification
- 2. If the manipulation mode of the INI file is set to Client-side, the modified INI will be redownloaded to the client side, which means the client user may lose all the changes that they made in the previous INI file.

# 5.4.4.3 DLL/OCX Files

Note: This tool is for Web applications only.

If your application calls to any DLL or OCX files, make the following two configurations to make sure the deployed Web application can successfully call the DLL or OCX files:

- Configure the DLL or OCX files in the application profile, to deploy the files to Web server with the application. Refer to Deploy External Files in *PowerServer Toolkit User Guide* on how to configure and deploy DLL or OCX files to Web server.
- Configure how the DLL or OCX files are downloaded to the Client using the AEM DLL/ OCX Files tool.

# Figure 5.77: DLL/OCX Files

AEM Console		Ī	Welcome > Application > PB Fe	atures > DLL/OCX Files										
Welcome     Server     Configuration     Configuration Summary     ⊕     Transactions	•		DLL/OCX Files Download (Web Only) DLL/OCX files are custom libraries tha automatically download and install the	) It contain custom user code that is called by Appe Ise files as required. Note: These settings are ava	eon Web applications. Appeon can ailable for Web applications only.									
Local Database			Application Name	Install Mode										
Registry Mode			acf	Install automatically without asking user										
INTFiles DLL/OCX Files			codeexamples	Install automatically without asking user										
Decimal Precision												order	Install automatically without asking user	
······Web Service DataWindow ·····Web Browser					sales	Install automatically without asking user								
Client Features			sapteched	Install automatically without asking user										
E Performance	h		<u>youhoops</u>	Install automatically without asking user										

# 5.4.4.3.1 Install mode

"Install Mode" defines how the DLL or OCX files of the selected application should be installed to a client browser. Whichever install mode is selected, when a DLL or OCX file is downloaded to a client, it will be saved to the "plugin" folder under the application directory.

Click the application name listed in the **DLL/OCX files** table, and then select a mode from the **Install Mode** table on the page that appears, and then click **Save**.

# Figure 5.78: DLL/OCX Files settings

1	<u>Welcome &gt; Application &gt; PB Features &gt; DLL/OCX Files &gt; [codeexamples]</u>
	Install Mode
	DLL/OCX files are custom libraries that contain custom user code that is called by Appeon Web applications. Appeon can automatically download and install these files as required. Note: These settings are available for Web applications only.
	<ul> <li>Install automatically without asking user</li> <li>Confirm with user, then install automatically</li> <li>Install manually (no automatic installation)</li> </ul>
⊟	Conflict Resolution Mode
	If a different file with the same name already exists, then:
	Install anyway without asking user
	◎ Do not install; use existing file
	Ask the user what to do
	Save Apply to All Applications

You can select the install mode that is most suitable for the application according to the description in the following table.

# Table 5.4: Install mode options

Install Mode	Description
Install automatically without asking user	Default. Before the Web application runs, the DLL and OCX files of the application are automatically downloaded and installed without giving any notification.
Confirm with user, then install automatically	Before the Web application runs, a message box will prompt the user to install the DLL and OCX files. If the user confirms this action, those files will be automatically installed.
Install manually (no automatic installation)	With this option, Appeon does not handle the DLL and OCX files installation for the application. Users must manually install

Install Mode	Description
	the DLL and OCX files of the application before accessing the application.
	This option is recommended if the DLL and OCX files used by the application are large size and take a long time to be downloaded over the network.

#### 5.4.4.3.2 Conflict Resolution Mode

"Conflict Resolution Mode" defines how to resolve file conflicts when a different file with the same file name already exists in the folder to which a DLL or OCX is downloaded. There are three mode options.

Conflict Resolution Mode	Description
Install anyway without asking user	Default. Directly replaces the file of the same name without notifying you.
Do not install; use existing file	Continues using the existing file.
Ask the user what to do	Displays a message box for the user to select whether to replace or keep the existing file.

#### **Table 5.5: Conflict resolution mode options**

# 5.4.4.4 Decimal Precision

The Decimal Precision Settings specifies the decimal precision for the Web or mobile application, you can select a proper one according to your actual needs.

- 15-digit Decimal supports numbers with up to 15 digits and offers high performance. It is available for all PowerBuilder developed applications.
- 28-digit Decimal supports numbers with up to 28 digits but offers lower performance than 15-digit Decimal. 28-digit Decimal is only available for applications developed with PowerBuilder 10.5 or above. It is not recommended to apply 28-digit decimal unless high precision number is necessary.

I Icui c cij / / Docimul I I coloron	Figure	5.79:	Decimal	Precision
--------------------------------------	--------	-------	---------	-----------

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>I</u>	B Features > Decimal Precision	
Welcome Server Server Transaction United Database Control Database Contro	^	Decimal Precision Selects a proper decimal precis performance. It is available for offers lower performance than or above. It is not recommende	ion for the Web application. 15-digit Decimal supports numbers with up to 15 digits and offers high all PowerBuilder developed applications. 28-digit Decimal supports numbers with up to 28 digits bu 5-digit Decimal. 28-digit Decimal is only available for applications developed with PowerBuilder 10 d to apply 28-digit decimal unless high precision number is necessary.	ut 0.5
Registry Mode		Application Name	Decimal Precision	
DLL/OCX Files		acf	15-digit Decimal	
Decimal Precision		codeexamples	15-digit Decimal	
Web Browser		order	15-digit Decimal	
Client Features		sales	15-digit Decimal	
Performance		sapteched	15-digit Decimal	
⊞ "Mobile UI Resizing	~	<u>vouhoops</u>	15-digit Decimal	

Step 1: Click the application name listed in the **Decimal Precision** table, and then select a decimal mode on the page that appears.

### **Figure 5.80: Decimal Precision Settings**

	<u>Welcome &gt; Application &gt; PB Features &gt; Decimal Precision &gt; [codeexamples]</u>										
Ξ	Decimal Precision										
	Decimal Precision: 🔘 15-digit Decimal 🔘 28-digit Decimal										
	Save										

Step 2: Click the **Save** button to save changes.

# 5.4.4.5 Web service DataWindow

You select the Web service DataWindow object and then configure the Web service URL.

Figure 5.81: Web service DataWindow

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>PB Fe</u>	<u>atures</u> > Web Servic	e DataWindow
Welcome     Application     Configuration Summary     □-Transactions     I of the second secon	E	Web Service DataWindow Configures the Web service URL for V Application Name	Veb service DataWindow DataObject Number	objects at runtime.
PP Features     Registry Mode     NIFiles		acf codeexamples	0	
DLL/OCX Files Decimal Precision		order	0	
Web Service DataWindow Web Browser Client Features		sapteched	0	
Data Transfer     Derformance		vouhoops	0	

This section takes the appeon\_code\_examples as an example to show how to configure the Web service URL in AEM.

Step 1: Choose **Application** > **PB Features** > **Web Service DataWindow** on the left pane of the AEM Console, and then click the application name listed in the **Web Service DataWindow** table.

Figure 5.82: Web service DataWindow for appeon\_code\_examples

1	Nelco	me > Application > PB Features > Web Service Data	aWindo	<u>ow</u> > [codeexamples]
Ξ	Web S	Service DataWindow		
	You ca	n select the Web service DataWindow object and then configure t	the Web	service URL.
		DataWindow Object		DataWindow Object
		d webservice arid		
⊟	Web S	Service URL		
	You ca service	in update the Web service URL for each DataWindow object by se URL below, and then clicking the Save button.	electing	he DataWindow object above and entering the correct Web
	Sa	/e		

Step 2: Select the DataWindow Object to configure or modify the Web Service URL(s).

To configure the Web Service URL for all methods of the selected DataWindow object(s):

- 1. In the **Web Service DataWindow** table, check the DataWindow object(s) for which you want to modify the Web Service URL.
- 2. In the Web Service URL table, input the Web Service URL.
- 3. Click **Save**. The input Web Service URL will be set to all methods of the selected DataWindow object(s).

To modify the Web Service URLs for a method of a DataWindow object:

- 1. In the **Web Service DataWindow** table, click the name of the DataWindow.
- 2. On the Web Service URL Settings page that displays, modify the Web Service URL for a method.

# Figure 5.83: Modify URL for DataWindow methods

1	Welcome > Application	> Web Service Da	a <u>taWindow</u> > <u>codeexamples</u> > [d_webservice_grid]								
	Web Service URL Settings										
	You are allowed to specify th	e web service URL of	each method in dataobject.								
	Actions	Method Name	Web Service URL								
	🚯 Update	of_delete	http://localhost/webservice_ace/webservice_ace.asmx								
	🚯 Update	of_insert	http://localhost/webservice_ace/webservice_ace.asmx								
	🚯 Update	of_retrieve	http://localhost/webservice_ace/webservice_ace.asmx								
	🚯 Update	of_update	http://localhost/webservice_ace/webservice_ace.asmx								

# 3. Click Update.

# 5.4.5 Web Browser

Note: This tool is for Web applications running in Internet Explorer only.

The Web Browser tool helps you manage and configure IE compatibilities and views.

Figure	5.84:	Web	Browser
--------	-------	-----	---------

AEM Console	7	<u>Nelcome</u> > <u>Application</u> > Web	Browser
Welcome  Server  Application Configuration Summary  Transactions		Web Browser (Web Only) Configures various client settings rel title, graphic theme, application auto	lated to the user interface and general user experience of the application, for example, application update, run mode, error message mode, start and exit behaviors, client storage location.
Local Database		Application Name	Compatibility Mode
Registry Mode		acf	32-bit, 64-bit
INI Files DLL/OCX Files		<u>codeexamples</u>	32-bit , 64-bit
-Decimal Precision		order	32-bit , 64-bit
Web Service DataWindow		sales	32-bit, 64-bit
Client Features		sapteched	32-bit , 64-bit
⊞-Performance		<u>youhoops</u>	32-bit, 64-bit

# 5.4.5.1 IE Compatibility

Appeon Web applications can be run in both 32-bit and 64-bit Internet Explorer; and it will automatically call the compatible PowerServer Web Component. But if the application calls OCX/DLL/OLE files, and depending how you compile the OCX/DLL/OLE files (in 32-bit

and/or 64-bit), you may want to specify the compatibility mode (32-bit and/or 64-bit) of the OCX/DLL/OLE files in this **IE Compatibility** tool, so if the OCX/DLL/OLE files run in an incompatible browser, the customized warning message will be displayed to the end user.

The other browsers such as Edge, Chrome, Firefox, or Opera only support 32-bit mode, therefore, if you have de-selected the 32-bit compatibility mode here, the warning message will be displayed at runtime when OCX/DLL/OLE files are executed.

**Note**: 32-bit DLLs can only work with 32-bit Internet Explorer, and cannot work with 64-bit Internet Explorer. As a workaround, you can modify the Windows system registry to start the Internet Explorer in 32-bit mode instead of 64-bit mode. To do this,

- 1. Run "regedit" command to open the Registry Editor.
- 2. Find the registry entry **HKEY\_LOCAL\_MACHINE\SOFTWARE\Microsoft\Internet Explorer\Main\TabProcGrowth**, and set it to a value greater than 0.
- 3. Close **Registry Editor** so changes will be saved, and restart Internet Explorer so it will be run in 32-bit mode.

Ξ	IE Compatibility				
	Specifies running Appeon V application will use the sam to these files. Appeon will p	Veb application i ne mode; otherw rompt the end us	n IE 32-bit mo ise the incom ser about this	de ano patibili incom	d/or 64-bit mode. Make sure the OCX/DLL/OLE files that are deployed with the ty between the IE mode and OCX/DLL/OLE files will cause malfunctions related patibility and you can customize the warning message here.
	Compatibility Mode:	🗹 32-bit	🗹 64-bit		
	Warning Message:	You are ru	inning the incompa	Web tibl	application in an
E	IE Browser Interface				
	Configure the IE browser inf	terface to satisfy	your needs. S	ettings	s here only affect the IE interface when accessing this application.
	Display the Menu Bar in IE	browser:	Yes	0	No
	Display the Status Bar in I	E browser:	Yes	$\odot$	No
	Display the Address Bar in	IE browser:	Yes	$\odot$	No
	Display all of the toolbars i	n IE browser:	Yes	$\odot$	No
	Open the IE browser in Fu	ull Screen view:	O Yes	۲	No

Figure 5.85: IE compatibility settings

Step 1: Specify the compatibility mode (32-bit or 64-bit or both) of the OCX/DLL/OLE files called by the Web application.

If the OCX/DLL/OLE files called by the Web application are compiled under 32-bit compatibility mode, then select 32-bit compatibility mode, if the OCX/DLL/OLE files are compiled under 64-bit compatibility mode, then select 64-bit compatibility mode; if there are two sets of OCX/DLL/OLE files: one complied under 32-bit compatibility mode for running in 32-bit IE browsers, the other complied under 64-bit compatibility mode for running in 64-bit IE browsers; then select both 32-bit and 64-bit compatibility modes. (To call the two sets of OCX/DLL/OLE files for different IE browsers in your source code, you may need to use the of\_is64browser function in the Appeon Workarounds PBL to determine if the IE browser is 64-bit. Refer to Section 2.3.1, "AppeonExtFuncs Object" in *Workarounds & API Guide*.

Step 2: In the Warning Message field, customize the warning message that will be displayed to end users when the OCX/DLL/OLE files run in an incompatible IE browser.

For example, if the OCX/DLL/OLE files called by the Web application are compiled under 32-bit compatibility mode (thus can only be run in a 32-bit IE browser), you may want to select 32-bit as Compatibility Mode, and then specify the following message in the Warning Message field so that it will be displayed if the user runs the Web application in a 64-bit IE browser: "You are running on a 64-bit IE browser now. Please notice that the Web application (mainly the OCX/DLL/OLE files) is compatible with 32-bit only, if you run on a 64-bit IE browser, the OCX/DLL/OLE related function may not work correctly. Do you want to continue running the 64-bit IE browser?".

# 5.4.5.2 IE Browser Interface

You can control the IE behavior by customizing the IE views in the IE Browser Interface tool in AEM. You can select to display or hide the menu bar, status bar, address bar, or all of the toolbars of IE browser, and open IE in full screen mode or normal mode, when a Web application runs in IE.

# Figure 5.86: IE Browser Interface

#### IE Browser Interface Configure the IE browser interface to satisfy your needs. Settings here only affect the IE interface when accessing this application. Display the Menu Bar in IE browser: Yes No Display the Status Bar in IE browser: Yes No Display the Address Bar in IE browser: No Yes Display all of the toolbars in IE browser: Yes O No Yes Open the IE browser in Full Screen view: No

Save

# Notes:

- 1. For IE 6, though the menu bar, status bar, address bar and all of the toolbars are set to display, they will be hidden if **Open the IE browser in Full Screen view** is set to **Yes**.
- 2. Address bar in IE 7/8/9/10/11 cannot be hidden, due to the new protection mechanism in Microsoft. You may want to see Microsoft help for details.
- 3. IE 7/8/9/10/11 toolbars include the Tab bar, the Menu bar, the Favorites or Links bar, and the Command bar, while IE 6 toolbars include the Menu bar, and the Address bar. Due to this difference, when **Display all of the toolbars in IE browser** is turned on or off, you will find different behaviours between IE 6 and IE 7/8/9/10/11.

For example, tabs in IE 7/8/9/10/11 will be shown, if both **Display all of the toolbars** in IE browser and **Display the Address bar in IE browser** are set to **Yes**, and will be hidden if either is set to **No**.

# 5.4.6 Client Features

The Client Features helps you configure various clients settings related to the user interface and general user experience of applications, for example, graphics theme, start and exit behaviors, and client deployment locations.

#### Figure 5.87: Client Features

AEM Console		7	<u>Nelcome</u> > <u>Application</u> > Client	Features									
Welcome	•		Client Features Configures various client settings rela title, graphic theme, application auto u	ted to the user interface and pdate, run mode, error mes	d general user experience of the a isage mode, start and exit behavio	upplication, for example application prs, client storage location.							
Local Database			Application Name	Web Application Theme	Web Application Auto Update	Client Storage Location							
Registry Mode			acf	Windows Vista/XP	Yes	Default User Profile Location							
			<u>codeexamples</u>	Windows Vista/XP	Yes	Default User Profile Location							
Decimal Precision										order	Windows Vista/XP	Yes	Default User Profile Location
·····Web Service DataWindow ·····Web Browser						sales	Windows Vista/XP	Yes	Default User Profile Location				
Client Features			sapteched	Windows Vista/XP	Yes	Default User Profile Location							
⊞-Data Transfer ⊞-Performance			youhoops	Windows Vista/XP	Yes	Default User Profile Location							

# 5.4.6.1 Application Title

You can configure the text shown in the title bar when the Web or mobile application is run. The default text is what defined in the Appeon license file.

This setting is effective only when you are using a Developer, Workgroup, or Enterprise Edition of PowerServer.

#### Figure 5.88: Application Title



# 5.4.6.2 Web Application Theme

Note: This tool is for the browser-based Web application running in Internet Explorer only.

The Web Application Theme specifies the theme of the browser-based Web application that will be used on the client side. The IWA Web app will not take this theme setting, instead they will directly use the theme of OS.

#### Figure 5.89: Web Application Theme



There are two options for Web Application Theme:

- Windows Vista: Applying this theme enables Appeon Web applications to show in Windows Vista style. The Windows Vista style also requires the end user set the Windows desktop Theme to Windows Vista.
- Windows Classic: Applying this theme makes Appeon Web application presented in traditional Windows 2000 style.

# 5.4.6.3 Web Application Auto Update

When an Appeon Web application or Appeon mobile application is re-deployed and run, it will compare the application files on the client with the files on the server, if there are

updated files on the server, it will download the files to the client if "Auto Update Web Files" is set to Yes, and will not download the files but directly use the cached files on the client if set to No. However, if there are new files on the server that do not exist on the client, then the new files will be downloaded regardless auto update is Yes or No.

If auto update is set to No, then the "Allow user to select run mode" setting in application Start & Exit Settings should be set to "No" and the "Default run mode" setting should be set to "Run after download", this will download all files to the client when the application is run for the first time, thus can avoid the following problems:

- If "Run now" rather than "Run after download" is selected, the files will be downloaded only when needed, which may cause the updated files (or part of them) to be downloaded unexpectedly, as they may not be used and downloaded already (thus do not exist on the client).
- If you switch the file generation mode (from release mode to debug mode, or vice versa, on PowerServer Toolkit | Configure button | Application Profiles tab page) and re-deploy the application, and if you select "Run now" rather than "Run after download", then you will see Web page errors when launching the Web application, as the application re-deployed under release mode (or debug mode) cannot directly use the cached files which were generated under debug mode (or release mode).

#### Figure 5.90: Auto Update

# Web Application Auto Update

If "Yes" is selected, all updated Web application files will be automatically downloaded from the server to the client. If "No" is selected, the Web application files will not be downloaded to the client even if there are updated Web application files on the server. Important Note: if the Web application is not set to auto update, the "Allow user to select run mode" setting in application Start & Exit Settings should be set to "No" and the "Default run mode" setting should be set to "Run after download", to ensure the Web application produces consistent results.

#### 5.4.6.4 Run Mode

The Run Mode sets whether the parameters transferred between the application and the server can be read and analyzed by stress-testing tools such as LoadRunner, UFT (Unified Functional Testing).

#### Figure 5.91: Run mode

```
      Run Mode

      Select the run mode for Web applications. If test mode has been turned on, Appeon Server will start in the performance test mode, allowing stress testing tools (such as LoadRunner) to read and write parameters in the plain text.

      Run Mode:
      Image: Test Mode
```

There are two Run Mode options:

- Normal mode: This is the default and recommended mode for running the Appeon Web application or the Appeon mobile application.
- Test mode: This is the mode specifically for applications under performance testing. It enables the script to be recorded and transferred in the plain-text format, so that the script can be modified or parameterized to simulate a more realistic stress scenario.

Note:

- 1. If the Test mode is selected, be sure to disable the data cache in the <u>DataWindow Data</u> <u>Cache</u> page before the application is run.
- 2. If the settings in the Test Mode have been changed, restart the Web browser to begin a new session. The changes will not take effect if you only click the **Refresh** button of the Web browser.

# 5.4.6.5 Error Message Mode

The Error Message Mode sets whether the errors occurred at runtime shall block the running of the application or not.

Click an application in the **Application Name** column of the table. The Error Message Mode settings page displays.

Figure 5.92: Error mode configuration

Erro	Error Message Mode (Browser-Based Apps Only)							
Spe	Specifies where to display error messages. Note: In IWA and mobile apps, error messages always display in pop-ups.							
Erro	or Level	Display Mode						
0		$\ensuremath{ullet}$ Display in the status bar	© Display in a popup message					
1		$\ensuremath{}$ Display in the status bar	Oisplay in a popup message					
2		$\ensuremath{}$ Display in the status bar	Oisplay in a popup message					
10		$\ensuremath{\mathbb O}$ Display in the status bar	Oisplay in a popup message					

- **Display in the status bar** mode means that the error displays in the Web browser status bar, and does not require the user to respond to it. The status bar only shows high-level error information.
- **Display in a popup message** mode means that the error shows in a popup message box, and requires the user to respond to it first before continuing with the application. The popup message shows all the information available for locating the error, including error ID, error description, most possible cause, solution, and links to the Online Help and Appeon Technical Support.

**Note**: Appeon mobile apps, IWA apps, as well as Web apps running in non-IE browser (such as Edge, Chrome, Firefox, or Opera) can only support this mode.

PowerServer divides all runtime errors into 4 levels according to their severity, and enables you to specify different display modes for different error levels.

- Level 0 Not severe. The error has little impact to the functions of the application and displays in the status bar.
- Level 1 Quite severe. The error is caused by incorrect configuration, and affects the running of the application. For example, no data source is set for the application. It displays in a popup message.
- Level 2 Very severe. The error is caused by incompatibility with Appeon product. For example, the specification of invalid Web URL. The error displays in a popup message.

• Level 10 - Most severe. The error reflects a bug in the Appeon product and displays in a popup message.

#### 5.4.6.6 Start & Exit

**Note:** These settings are available for Web apps running in the browser only, and not available for mobile and IWA apps.

The Start & Exit settings determine the modes when you start or exit the Web application. It includes the settings for **Allow user to select run mode**, **Default Run Mode**, and **Exit Mode** when exiting the Web application.

#### Figure 5.93: Start & Exit Settings

Start & Exit (Browser-Based Apps Only)								
Specifies the Web application start and exit behaviors. Please note that the "Run after download" will result in the entire Web application to be downloaded into cache, which increases the initial download time.								
Allow user to select run mode:	© Yes ◉ No							
Default run mode:	Run now      Run after download							
Exit Mode:	Close browser Close tab Redirect to about:blank							

#### 5.4.6.6.1 Allow user to select run mode

Before you start the Web application, you can set whether to allow the user to set the run mode of the Web application.

- Yes: When you run a Web application, a run mode page will be displayed to allow you to select the running mode of the Web application, there are two modes: **Run Now** or **Run After Download**. Note: These two modes are not related with that are set in **Default run mode**, even you set the value of **Default run mode**, you can still change it and select the running mode according to your actual need in the run mode page.
- No: When you run a Web application, there will be no run mode page being displayed, the Web application is directly running under the mode selected in **Default run mode**.

#### 5.4.6.6.2 Default run mode

This option provides feasible download modes to the end user if they use slow bandwidth. Depending on the bandwidth, the end user can select from the following run modes when the application starts:

- **Run now**: The application runs immediately and files will be downloaded only when used. This mode is recommended for high speed network.
- **Run after download**: The application runs after all files are downloaded to the client. This is recommended for clients using low bandwidth.

#### 5.4.6.6.3 Exit Mode

You can control the behavior of the Web browser when you exit the Web application.

• **Close browser**: Select this option if you want the Web browser to automatically close when you exit the Web application.

- **Close tab**: Select this option if you want the Web browser to stay opened and only the tab page running the Web application to be closed when you exit the Web application. This option is effective to Internet Explorer 7.0 or above.
- **Redirect to**: Select this option if you want the current browser or tab page which runs the Web application to be redirected to run the specified URL.

# 5.4.6.7 Client Storage Location

Note: This setting is available for Web applications only.

Specify a location to store the Web application files on the client side.

No matter which location is specified, you can call AppeonGetCacheDir function in *Workarounds & API Guide* to get the current directory for the application.

**Figure 5.94: Client storage location** 

Ξ	Client Storage Location (Web Only)						
	Specifies where to cache the web application files. Note: These settings are available for Web applications only.						
	Oefault User Profile Location	Stores the Web application files in the user profile folder as determined by the Windows OS. The application will remain cached regardless the Browser Cache Folder is cleared, which ensures fastest application startup.					
	Browser Cache Folder	Stores the Web application files in the Browser Cache Folder, for example, the Temporary Internet Files Folder of Internet Explorer. If the Browser Cache Folder is cleared the Web files must be redownloaded.					
	Customized Location	Stores the Web application files in the location specified below. The application will remain cached regardless the Browser Cache Folder is cleared, which ensures fastest application startup. Please specify an absolute path (e.g. C:\Appeon\) or utilize one of the following dynamic paths: %system% denotes Windows system path; %ouserLocation% denotes default Windows user profile path (e.g. C:\Documents and Settings\Administrator\Application Data); %oalluserLocation% denotes windows configuration directory for all users (e.g. C:\Documents and Settings\All User\Application Data); %systemDrive% denotes the system drive root (e.g. C:).					

There are three options. Choose one of them to best fit your environment.

- Default User Profile Location: The Web application files will be stored permanently in the %appdata%\appeon folder allocated by the Windows system, unless you remove them manually. The %appdata%\appeon folder in Windows 7/8 is: %SYSTEMDRIVE%\users \{username}\AppData\Roaming\appeon
- Browser Cache Folder: The Web application files will be stored in the IE cache (no matter the application is run in IE, Edge, Chrome, Firefox, or Opera). If the IE cache is cleared, the files will be downloaded again the next time the application runs. The IE cache directory varies depending on the Windows OS:

 $\label{eq:solution} Windows \end{tabular} windows \end{tabular} \end{tabular} windows \end{tabular} \end{tabular} windows \end{tabular} \end{tabular} windows \end{tabular} \end{tabul$ 

• Customized Location: The Web application files will be stored in the location specified here. You must specify absolute path here (e.g. C:\Appeon\) or use one of the following dynamic paths:

%SYSTEMDRIVE% which stands for system drive root, e.g. C:\.

%SYSTEM% which stands for the Windows system directory. In Windows 7 and later, C: \Windows.

%USERPROFILE% which stands for the Windows user profile folder. In Windows 7 and later, C:\Users\{username}.

%HOMEPATH% which stands for the home folder for the Windows user. In Windows 7 and later, C:\Users\{username}.

%USERLOCATION% which stands for the Windows user profile folder. In Windows 7 and later, C:\Users\{username}\AppData\Roaming.

%ALLUSERLOCATION% which stands for the Windows user profile folder for all users. In Windows 7 and later, C:\ProgramData.

When this option is selected, the following table will display for you to specify the storage location for the Web files of different types. Note that the first path **System Files Storage Path** cannot be empty or null, and it should be specified first, because the value specified here will be used automatically as the root path for the following items by default. You can change the path for each file type according to the actual needs.

# Figure 5.95: Customized location

Customized Location				
Specifies where to cache the web application files. Note: These settings are available for Web application only.				
Path Type	Path			
System Files Storage Path				
Application Object Files Storage Path				
OLE Files Storage Path				
Menu Object Files Storage Path				
Image File Storage Path				
OCX/DLL Files Storage Path				
INI Files Storage Path				
DataWindow Meta Files Storage Path				

Save

# 5.4.6.8 Client Logs

Select one of the following modes for the logs generated on the client side, and specify the maximum size for the log files.

# Figure 5.96: Client Logs

ClientLog			
Specifies the log mode and the maximum size of log files on the client side. The log file will record the client system information and the application environment information, for debugging purpose only. If these are confidential information, please remove them before sending the log file. When logging is enabled, all clients where the application is running will automatically write information to the log file, which may affect the application runtime performance. Please be cautious to turn on logging and turn i off once not necessary.			
Log Mode Log File			
Off (default)	Log file size: 2 MB (2MB<=File size<=5MB)		
© Error mode			
🔘 Info mode			
◎ Debug mode			

See the following table for details on the mode options.

Client Log Mode	Description
OFF	Does not generate any log file.
ERROR	Only generates error log files.
INFO	Generates log files that are informative to users.
DEBUG	Generates detailed log files that are sufficient for routine checking and troubleshooting.

# Table 5.6: Client Log Mode

**Log File**: Enter a number between 2 to 5 here to specify the log size to be generated. If the log generated reaches the specified number, the generated logs will be automatically removed from the client.

# Log path:

- For Web applications:
  - If you select **Default User Profile Location** as the client storage location in <u>Client</u> <u>Storage Location</u>, the log is saved in C:\Users\{username}\AppData\Roaming\appeon \%appname%\log\appeonclient.log. {username} is the Windows login name you are using, for example, *administrator*.
  - 2. If you select **Browser Cache Folder** as the client storage location in <u>Client Storage</u> <u>Location</u>, the log is saved in C:\Users\{username}\AppData\Local\Microsoft\Windows \Temporary Internet Files\{systemfolder1}\{subsystemfolder1}\appeonclient.log.

{username} is the Windows login name you are using, for example, *administrator*.

{systemfolder1} is a system-hidden directory (not the general hidden files) that cannot be displayed even by enabling the **Show hidden files, folders, and drivers** option (**Computer** > **Organize** > **Folder and search options** > **View** > **Show hidden files, folders, and drivers**), and the name for the {systemfolder1} is usually *content.IE5* or similar, so you just can open the {systemfolder1} by typing C:\Users \{username}\AppData\Local\Microsoft\Windows\Temporary Internet Files\content.IE5\ into the **Address** bar. The name for {subsystemfolder1} is random.

An automatic way to determine the browser cache directory for the current application is by calling an API Appeon provides. See AppeonGetCacheDir function in *Workarounds & API Guide*.

- If you select Customized Location as the client storage location in <u>Client Storage</u> <u>Location</u>, the log is saved in %System Files Storage Path%\log\appeonclient.log. For example, if you type *e:\App* in the System Files Storage Path text box in Client Storage Location, the log will be saved in e:\App\log\appeonclient.log.
- For mobile applications (that run in Appeon Workspace): The log file is saved in the **Log** folder under the application folder on your mobile device. You cannot view the log file on mobile device as how you view the Web application log on PCs; but you can view the log or send the log via email in Appeon Workspace. For details on how to view the log or send the log via email, refer to Section 5.9, "Configuring logs" in *Appeon Workspace User Guide*.
- For native mobile applications: You can call the **of\_sendmail** function of **eon\_mobile\_awsex** object to send the log as attachment, and the log file path and name is: AppeonGetCacheDir()+"/Log/EonMob.log".

Refer to the section called "of\_sendmail" in Workarounds & API Guide for details.

# 5.4.6.9 Retina Display

Note: This tool is for iOS mobile apps only.

Configures whether to support retina display or not on retina-supported iOS devices using this **Retina Display** tool. When enabled, the UI including controls, text, and images will not be scaled. As a result, the application will look very crisp at the expense of higher memory.

#### Figure 5.97: Retina Display Supported

Ξ	Retina Display
	Configures whether to support retina display or not on iOS devices. When enabled, the UI including controls, text, and images, will not be scaled. As a result, the application will look very crisp at the expense of higher memory.
	Save

# 5.4.7 Data Transfer

Data Transfer is a set of tools for viewing and modifying Charset and Encoding.

Figure	5.98:	Data	Transfer
--------	-------	------	----------

AEM Console	Welcome > App	lication > Data Transfer
Welcome Server Application Configuration Summary	Data Transfer Contains charset a	ind transfer encoding.
	Charset	Configures the charset (character set) used by the applications. It is unnecessary to perform this configuration if the application database charset is UTF-8, or if the application database charset supports the data that are saved to the database.
Web Browser Client Features Data Transfer Charset Fonding	Encoding	You are allowed to choose the encoding mode for transferring data in Appeon for PowerBuilder. The network traffic for the same data using different encoding modes varies. If the language of your project is English, it is strongly recommended that you choose the UTF-8 mode. If there are languages other than English in your project, choose the UTF-16LE mode.

### 5.4.7.1 Charset

The character set conversion can be enabled at the data source level for each application if you specify the input Charset and database Charset for the cache in AEM.

You will find the Charset tool useful when:

- The database uses non-UTF-8 character set, and
- The language display of the application has error code in it

Otherwise, it is unnecessary to use this tool.

#### Figure 5.99: Charset settings

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>Data Transfer</u> > Charset				
Welcome Server Application Configuration Summary		Charset Sets the charset at the connection cache level. Appeon Server will convert the data from the input charset to the database charset.				
Local Database		Application Name	Number	Data Source		
Web Browser		acf	0	0		
⊡ Client Features ⊟ Data Transfer		<u>codeexamples</u>	0	٥		
Charset		order	0	0		
Encoding ⊡ Performance		sales	0	0		
E Client Security		sapteched	0	0		
Emmobile of Resizing	«	youhoops	0	0		

#### 5.4.7.1.1 Configuring database Charset for a data source

Step 1: Click an application in the Application Name column. The Configure Charset window opens.

#### **Figure 5.100: Configure charset settings**

1	<u>Welcome</u> > <u>Application</u> > <u>Data Transfer</u> > <u>Charset</u> > [codeexamples]				
	Charset Configuration				
	Actions	Data Source	Charset	Client-Side Charset	
	Add Charset				

Step 2: Click the Add Charset button. The Add Charset window opens.

#### Figure 5.101: Add charset settings

	Welcome > Application	> <u>Data Transfer</u> > <u>Charset</u> > <u>Add Charset</u> > [codeexamples]
E	Add Charset	
	Application Name: Data Source: Database Charset: Client-side charset:	codeexamples
	Save and Add	Save

Step 3: Select the data source from the **Data Source** dropdown list.

Step 4: Select the database charset type from the **Database Charset** dropdown list. The Charset should be consistent with the Charset used in the database. This will not change the setting in the database.

Step 5: Select the input charset type from the **Client-side Charset** dropdown list. This setting should match the input Charset type at the client side.

Step 6: Click the **Save** button to confirm the configuration or **Save and Add** to add another one.

# 5.4.7.1.2 Updating a Charset

On the Charset page, click **Update** under Actions to update a Charset for a data source.

# 5.4.7.1.3 Deleting a Charset

On the Charset page, click **Delete** under Actions to delete an unwanted Charset for a data source.

# 5.4.7.1.4 Charset options given in the Charset fields

The following table lists all the Charset options provided in the "Database Charset" field and the "Client-side Charset" field, and provides a brief description of each Charset. If the actual database Charset or the input Charset is not provided as an option, you can use the following method to manually add the type as an option:

Step 1: Open the file constant.config in the directory %powerserver%\AEM\config\.

Step 2: Add the Charset type as an entry into the file, and save the file.

For example, if the Charset type that you want to add is "gbk", you can add a new line <charset name="gbk" value="gbk"></charset> in the file.

Step 3: Restart PowerServer and the "gbk" Charset will be added to the Charset lists.

The following table lists the character sets and code pages. The asterisk (\*) at the last column indicates that Microsoft .NET Framework supports the code page, regardless of the platform.

Page	Charset	Description	Asterisk
37	IBM037	IBM EBCDIC (US - Canada)	
437	IBM437	OEM US	
500	IBM500	IBM EBCDIC (International)	
708	ASMO-708	Arabic (ASMO 708)	
720	DOS-720	Arabic (DOS)	
737	ibm737	Greek (DOS)	
775	ibm775	Baltic (DOS)	
850	ibm850	Western European (DOS)	
852	ibm852	Central European (DOS)	
855	IBM855	OEM Cyrillic	
857	ibm857	Turkish (DOS)	

Table 5.7: Charset and code pages

Page	Charset	Description	Asterisk
858	IBM00858	OEM Multi-Language Latin I	
860	IBM860	Portuguese (DOS)	
861	ibm861	Iceland (DOS)	
862	DOS-862	Hebrew (DOS)	
863	IBM863	Canadian French (DOS)	
864	IBM864	Arabic (864)	
865	IBM865	Northern European (DOS)	
866	cp866	Cyrillic (DOS)	
869	ibm869	Modern Greek (DOS)	
870	IBM870	IBM EBCDIC (Multi-Language	
		Latin 2)	
874	windows-874	Thai (Windows)	
875	cp875	IBM EBCDIC (Modern Greek)	
932	shift_jis	Japanese (Shift-JIS)	
936	gb2312	Simplified Chinese (GB2312)	*
949	ks_c_5601-1987	Korean	
950	big5	Traditional Chinese (Big5)	
1026	IBM1026	IBM EBCDIC (TurkishLatin 5)	
1047	IBM01047	IBM Latin 1	
1140	IBM01140	IBM EBCDIC (US - Canada - Europe)	
1141	IBM01141	IBM EBCDIC (German - Europe)	
1142	IBM01142	IBM EBCDIC (Denmark - Norway - Europe)	
1143	IBM01143	IBM EBCDIC (Finland - Sweden - Europe)	
1144	IBM01144	IBM EBCDIC (Italy - Europe)	
1145	IBM01145	IBM EBCDIC (Spain- Europe)	
1146	IBM01146	IBM EBCDIC (U.K Europe)	
1147	IBM01147	IBM EBCDIC (France - Europe)	
1148	IBM01148	IBM EBCDIC (International - Europe)	
1149	IBM01149	IBM EBCDIC (Iceland - Europe)	
1200	utf-16	Unicode	*
1201	UnicodeFFFE Unicode (Big-Endian)		*
1250	windows-1250	Central Europe (Windows)	
1251	windows-1251	Cyrillic (Windows)	

Page	Charset	Description	Asterisk
1252	Windows-1252	Central Europe (Windows)	*
1253	windows-1253	Greek (Windows)	
1254	windows-1254	Turkish (Windows)	
1255	windows-1255	Hebrew (Windows)	
1256	windows-1256	Arabic (Windows)	
1257	windows-1257	Baltic (Windows)	
1258	windows-1258	Vietnamese (Windows)	
1361	Johab	Korean (Johab)	
10000	macintosh	Central Europe (Mac)	
10001	x-mac-japanese	Japanese (Mac)	
10002	x-mac-chinesetrad	Traditional Chinese (Mac)	
10003	x-mac-korean	Korean (Mac)	*
10004	x-mac-arabic	Arabic (Mac)	
10005	x-mac-hebrew	Hebrew (Mac)	
10006	x-mac-greek	Greek (Mac)	
10007	x-mac-cyrillic	Cyrillic (Mac)	
10008	x-mac-chinesesimp	Simplified Chinese (Mac)	*
10010	x-mac-romanian	Romanian (Mac)	
10017	x-mac-ukrainian	Ukrainian (Mac)	
10021	x-mac-thai	Thai (Mac)	
10029	x-mac-ce	Central Europe (Mac)	
10079	x-mac-icelandic	Iceland (Mac)	
10081	x-mac-turkish	Turkish (Mac)	
10082	x-mac-croatian	Croatian (Mac)	
20000	x-Chinese-CNS	Traditional Chinese (CNS)	
20001	x-cp20001	TCA Taiwan	
20002	x-Chinese-Eten	Traditional Chinese (Eten)	
20003	x-cp20003	IBM5550 Taiwan	
20004	x-cp20004	TeleText Taiwan	
20005	x-cp20005	Wang Taiwan	
20105	x-IA5	Central Europe (IA5)	
20106	x-IA5-German	Germany (IA5)	
20107	x-IA5-Swedish	Swedish (IA5)	
20108	x-IA5-Norwegian	Norwegian (IA5)	
20127	us-ascii	US-ASCII	*

Page	Charset	Description	Asterisk			
20261	x-cp20261	T.61				
20269	x-cp20269	ISO-6937				
20273	IBM273	IBM EBCDIC (Germany)				
20277	IBM277	IBM EBCDIC (Denmark -	-			
		Norwegian)				
20278	IBM278	IBM EBCDIC (Finland- Swedish)				
20280	IBM280	IBM EBCDIC (Italy)				
20284	IBM284	IBM EBCDIC (Spanish)				
20285	IBM285	IBM EBCDIC (U.K.)				
20290	IBM290	IBM EBCDIC (Japanese Katakana)				
20297	IBM297	IBM EBCDIC (France)	-			
20420	IBM420	IBM EBCDIC (Arabic)				
20423	IBM423	IBM EBCDIC (Greek)	-			
20424	IBM424	IBM EBCDIC (Hebrew)	-			
20833	x-EBCDIC- KoreanExtended	IBM EBCDIC (Korean Extension)				
20838	IBM-Thai	IBM EBCDIC (Thai)				
20866	koi8-r	Cyrillic (KOI8-R)	-			
20871	IBM871	IBM EBCDIC (Iceland)				
20880	IBM880	IBM EBCDIC (Cyrillic Russian)	-			
20905	IBM905	IBM EBCDIC (Turkish)				
20924	IBM00924	IBM Latin 1				
20932	EUC-JP	Japanese (JIS 0208-1990 and 0212-1990)				
20936	x-cp20936	Simplified Chinese (GB2312-80)	*			
20949	x-cp20949	Korean Wansung	*			
21025	cp1025	IBM EBCDIC (Cyrillic Serbian - Bulgarian)				
21866	koi8-u	Cyrillic (KOI8-U)				
28591	iso-8859-1	Central Europe (ISO)	*			
28592	iso-8859-2	Central Europe (ISO)				
28593	iso-8859-3	Latin 3 (ISO)	-			
28594	iso-8859-4	Baltic (ISO)				
28595	iso-8859-5	Cyrillic (ISO)				
28596	iso-8859-6	Arabic (ISO)	-			
28597	iso-8859-7	Greek (ISO)				

Page	Charset	Description	Asterisk
28598	iso-8859-8	Hebrew (ISO-Visual)	*
28599	iso-8859-9	Turkish (ISO)	
28603	iso-8859-13	Estonian (ISO)	
28605	iso-8859-15	Latin 9 (ISO)	
29001	x-Europa	Europa	
38598	iso-8859-8-i	Hebrew (ISO-Logical)	*
50220	iso-2022-jp	Japanese (JIS)	*
50221	csISO2022JP	Japanese (JIS- 1 byte Kana)	*
50222	iso-2022-jp	Japanese (JIS- 1 byte Kana - SO/ SI)	*
50225	iso-2022-kr	Korean (ISO)	*
50227	x-cp50227	Simplified Chinese (ISO-2022)	*
51932	euc-jp	Japanese (EUC)	*
51936	EUC-CN	Simplified Chinese (EUC)	*
51949	euc-kr	Korean (EUC)	*
52936	hz-gb-2312	Simplified Chinese (HZ)	*
54936	GB18030	Simplified Chinese (GB18030)	*
57002	x-iscii-de	ISCII Sanskrit	*
57003	x-iscii-be	ISCII Bengalese	*
57004	x-iscii-ta	ISCII Tamil	*
57005	x-iscii-te	ISCII Telugu	*
57006	x-iscii-as	ISCII Assamese	*
57007	x-iscii-or	ISCII Oriya	*
57008	x-iscii-ka	ISCII Kannada	*
57009	x-iscii-ma	ISCII Malayalam	*
57010	x-iscii-gu	ISCII Gujarat	*
57011	x-iscii-pa	ISCII Punjab	*
65000	utf-7	Unicode (UTF-7)	*
65001	utf-8	Unicode (UTF-8)	*
65005	utf-32	Unicode (UTF-32)	*
65006	utf-32BE	Unicode (UTF-32 Big-Endian)	*

# 5.4.7.2 Encoding

Encoding specifies the encoding format for data transferred between the clients and the server. The transfer speed varies when the encoding format changes.

AEM Console			Welcome > <u>Application</u> > <u>Data</u>	<u>Transfer</u> > Encodir	ng
─Welcome ⊕ Application ←Configuration Summary ⊕ Transactions	*		Transfer Encoding You are allowed to choose the encodu using different encoding modes varie 8 mode. If there are languages other	ling mode for transferrir s. If the language of you than English in your pro	ng data in Appeon for PowerBuilder. The network traffic for the same data ur project is English, it is strongly recommended that you choose the UTF- ject, choose the UTF-16LE mode.
			Application Name	Transfer Encoding	
Web Browser Client Features			acf	UTF-8	
Data Transfer     Charset			<u>codeexamples</u>	UTF-8	
E-Client Security			order	UTF-8	
			sales	UTF-8	
Hobile UI Resizing			sapteched	UTF-8	
		,,	vouhoops	UTF-8	

# Figure 5.102: Encoding

If the language of the application is pure English, select UTF-8; otherwise, select UTF-16LE.

**Figure 5.103: Encoding settings** 

<u>Welcome &gt; Application &gt; Data Transfer &gt; Encoding</u> > [codeexamples]
Encoding
You are allowed to choose the encoding mode for transferring data in the Appeon application. The network traffic for the same data using different encoding modes varies: if the language of your project is English, it is strongly recommended that you choose the UTF-8 mode; if there are languages other than English in your project, choose the UTF-16LE mode.
Encoding: O UTF-8 O UTF-16LE

# 5.4.8 Performance

Performance is a set of tools for viewing and modifying Multi-thread Download, application Server Cache and DataWindow Data Cache.

# Figure 5.104: Performance

AEM Console		Welcome > Application > Performance				
Welcome  Server  -Application Configuration Summary		Performance Contains multi-thread download, application server cache and DataWindow data cache.				
Transactions     Local Database     PB Features		Multi-Thread Download	Download static resources with multi-threads to boost performance. The static resources refer to resources that exist on the Web server as files, such as the JS files, image files, and HTML files. Note: This setting is available for Web application only.			
Web Browser Client Features		Application Server Cache	Configures the amount of memory allocated to each application for caching DataWindow syntax and SQL statements on Appeon Server.			
Data Hansler     Performance    Multi-Thread Download		DataWindow Data Cache	Configures caching on the Web server and in the Web browser of data retrieved into DataWindows.			
Application Server Cache DataWindow Data Cache						

# 5.4.8.1 Multi-Thread Download

Note: This option is available for Web applications only.

The Multi-Thread Download setting specifies how many threads a client will take for simultaneously downloading application Web files (such as JavaScript files, image files, and HTML files) from the Web server. This option makes full use of the network bandwidth between clients and Web server, and shortens the time that clients must wait during the Web files download process.

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>Performance</u> > Multi-Thread Download					
Welcome Server -Application -Configuration Summary HTransactions	~	Hulti-Thread Download (Web Only) Download static resources with mul server as files, such as the JS files,	) ti-threads to boost perfor mage files, and H TML fil	mance. The static resources refer to resources that exist on the Web es. Note: This setting is available for Web application only.			
Local Database		Application Name	Maximum Threads				
Web Browser		acf	2				
⊡Client Features ⊞⊡Data Transfer		codeexamples	2				
⊟ Performance		order	2				
		sales	2				
		sapteched	2				
⊞ Client Security ⊞ Mobile UI Resizing		<u>vouhoops</u>	2				

Figure 5.105: Multi-thread Download

Click the application name in the **Multi-thread Download** table, and then enter a number in the **Maximum Threads** text box, and then click **Save**.

**Figure 5.106: Maximum Threads** 

	AEM Console > Applic	ation > <u>Data Transfer</u> > <u>Multi-Thread Download</u> > [sales_application_demo]						
_	Maximum Threads							
	Specify the maximum number of download threads for the application. The valid number must be within the range from 1 to 6; the default value is 2.							
	Maximum Threads:	2						
	Save							

Before setting the thread number, you should take full consideration of the network condition where the application will be running, and the capability of the Web server that supports the application -- whether the network and the Web server can support a large number of threads at the same time without jeopardizing the overall performance.

It is your choice to set the thread number from 1 to 6 based on the available network condition.

# 5.4.8.2 Application Server Cache

Note: This tool is available for Web applications only.

Every time a Web application starts, PowerServer loads the DataWindow syntax and embedded SQLs of the application to its memory. If PowerServer is supporting multiple applications and loads all the syntax and SQLs of the applications into the memory, too much server memory is consumed, which results in a performance reduction of all applications.

AEM provides the Application Server Cache tool for you to leverage PowerServer resources and make sure it has enough resources for supporting important applications.

# 5.4.8.2.1 What is Application Server cache?

An Application Server cache is a portion of PowerServer memory that is allocated for temporarily storing DataWindow syntax and embedded SQLs of an application.

Depending on the cache size specified for an application, PowerServer loads part or all of the application DataWindow syntax and embedded SQLs when the application starts. If PowerServer only loads part of the DataWindow syntax and embedded SQLs of an application to the cache, the application runtime performance is affected because PowerServer needs to read certain DataWindow syntax and embedded SQLs from the database instead of reading from the memory.

Make sure that the cache size is large enough for essential applications and those frequently accessed by users. If the PowerServer memory is tight, you can consider decreasing the cache size for minor applications.

# 5.4.8.2.2 Modifying the PowerServer cache settings for an application

In the **Application Server Cache** table, the **Cache** column shows the PowerServer cache size allocated for the corresponding application, while the **Cache Usage** column shows how much cache the application currently occupies in the PowerServer memory.

Figure 5.107: Application Server Cache

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>Performance</u> > Application Server Cache				
Welcome Server Application Configuration Summary	Ξ	Application Server Cache Specifies the size of Appeon Server cache, which stores DataWindow syntax and SQL statements.				
Transactions     Local Database		Application Name	Cache (MB)	Cache Usage (KB)		
PB Features		<u>acf</u>	3	0.000		
		<u>codeexamples</u>	3	0.000		
Data Transfer		order	3	0.000		
Multi-Thread Download		sales	3	0.000		
Application Server Cache		sapteched	3	0.000		
E Client Security	1	<u>vouhoops</u>	3	0.000		

Take the following steps if you want to change the cache size for an application:

Step 1: Click an application listed in the **Application Server Cache** table. A new page opens and displays the current cache setting for the application.

# Figure 5.108: Modify Cache Setting

1	<u>Welcome &gt; Application &gt; Performance &gt; Application Server Cache &gt; [codeexamples]</u>						
⊟	Cache Size Modification						
	Please specify the cache size for storing the DataWindow syntax and SQL statements of the application. The default size is 3 MB. Setting the size to "0" means that no cache is available for the application. Setting the size to less than "0" means that the cache size has no limit.						
	Cache size: 3 MB						
	Save						

Step 2: Modify the cache size. You can:

• Set the size to a figure bigger than "0". By default, the cache size is 3MB. This is suitable for a common application.

For example, suppose there are two applications, appA (which is less important) and appB (which is important). You can set the memory limit for appA as 3MB, and set the memory

limit for appB as 10MB. If the client runs appA, PowerServer loads a maximum of 3MB syntax and SQL into its memory; if the client runs appB, PowerServer loads a maximum of 10MB syntax and SQL into its memory. If the actual size of appA syntax and SQL is very large (more than 10MB), the running of appA will not affect the running of appB.

- Set the size to "0", which means that no cache is available for loading DataWindow syntax or Embedded SQLs. PowerServer always reads the DataWindow syntax and embedded SQLs from the database.
- Set the size to less than "0" (-3, for example), which means that the cache has no limit. PowerServer will load all the DataWindow syntax, DataWindow SQLs, and Embedded SQLs of the application into the cache.

Setting the size to "0" is not recommended because it will result in slow performance. If the server has enough memory and the number of the deployed applications is less than 10, it is recommended that you set the size for all applications to less than "0". If the server does not have enough memory, but it contains many deployed applications, it is recommended that you set all important applications, as well as applications using many DataWindows and Embedded SQL, to less than "0" or much higher than 3M. Keep all other applications at the default setting.

Step 3: Click the **Save** button to save changes.

# 5.4.8.3 DataWindow Data Cache

You can configure the **Dynamic-DW SQL Cache** settings and the **DataWindow Object Cache** settings for a particular application under this the **DataWindow Data Cache** tool.

Figure 5.109:	DataWindow	Data	Cache
---------------	------------	------	-------

AEM Console			<u>Welcome</u> > <u>Application</u> > <u>Performance</u> > DataWindow Data Cache				
		⊟	DataWindow Data Cache Settings Data retrieved into DataWindow object	ts can be cached	i at the Web server	or the client to improve perfe	ormance and scalability.
Transactions     Jocal Database			Application Name	Server Cache	Browser Cache	Dynamic-DW SQL Cache	
PB Features			acf	No	No	Yes	
Web Browser Client Features			codeexamples	No	No	Yes	
🕀 Data Transfer			order	No	No	Yes	
Multi-Thread Download			sales	No	No	Yes	
Application Server Cache			sapteched	No	No	Yes	
Client Security			<u>youhoops</u>	No	No	Yes	

# 5.4.8.3.1 Dynamic-DW SQL Cache

Dynamic-DW SQL Cache tool specifies whether to cache the "select \*" syntax or and syntax of this type for dynamic DataWindow objects. If the "select \*" syntax is cached, it will boost performance, but it will not be refreshed when the table structure changes dynamically.

Step 1: Click on the application you intend to configure on the **DataWindow Data Cache** page.

Step 2: In the **Dynamic-DW SQL Cache** table, configure whether to cache the "select\*" syntax or syntax of this type or not, as shown in the following figure.

#### Figure 5.110: Dynamic-DW SQL Cache

# Dynamic-DW SQL Cache Specifies whether to cache the "select \*" syntax or syntax of this type for dynamic DataWindow objects. When selecting "YES", "select \*" syntax is cached; it will boost performance, but it will not be refreshed when the table structure changes dynamically. When selecting "NO", the syntax of this type will not be cached. Note: Normal cache functionalities of other types of sql syntax (not including "select \*" syntax) will not be influenced by these configurations. • Yes • No

#### 5.4.8.3.2 DataWindow Object Cache Settings

You can apply the DataWindow Data Cache tool to cache DataWindow data that are frequently used on the PowerServer and/or the client.

- DataWindow Data Cache at the PowerServer stores the data in the memory. The cached data will be available unless the server memory is cleared (for example, by restarting the server)
- DataWindow Data Cache at the client stores and encrypts data in the Temporary Files folder of the Internet Explorer. The cached data will be available unless the Temporary Files folder is emptied.

Therefore, this tool can significantly reduce server load and network traffic, boosting performance and scalability.

#### **Important:**

1) DataWindow Data Cache is unsupported for Informix and Oracle 8i (though supported for Oracle 9i, 10g, and 11g) databases.

2) Disable DataWindow Data Cache in AEM if the application is set to the Test Mode in the Run Mode setting.

3) Do not cache DataWindows whose SQL statements contain non-table related expressions and the result of the expressions is dynamically generated. If these DataWindows are cached, the display result on the Web or on the mobile may be different from that in PowerBuilder.

4) DataWindows created dynamically cannot cache data on the PowerServer. Even though the Cache tool is enabled for such DataWindows, data will still be retrieved from the database.

5) DataWindow Data Cache at the PowerServer or at the client will not be effective until you fulfill all the configuration requirements described in the following sections:

- Configuration required for database servers
- Configuration required for Web servers (for Web server cache only)
- Configuration for DataWindow Data Cache in AEM

6) There is a restriction on the database table where a cache-enabled DataWindow retrieves data: the first twenty characters in the table name must be different from those in the other tables in the database. If the first twenty characters in two tables are the same, the Cache tool cannot correctly identify the table that the DataWindow uses.

7) The DataWindow Data Cache tool works with Web servers running on Windows (such as the Apache Web server running on Windows), and does not work with Web servers running on Unix\Linux (such as the Apache Web server running on Solaris).

# Configuration required for database servers

Appeon specially provides SQL files for the supported database servers (except Informix). You need to **execute** the SQL file of a database server for the server to support the DataWindow data-caching feature.

# Note: DataWindow data-caching feature is unsupported for Informix, MySQL, Teradata, HANA, and PostgreSQL.

The following table lists the SQL file that should be executed for the supported database server. The SQL files reside in the %powerserver%\sql\cache\ folder, where %powerserver% indicates the PowerServer installation directory, for example, C:\Inetpub\wwwroot\appeon.

Database Type	SQL File
Oracle	To enable this feature, execute install_appeon_cache_ORACLE.sql.
	To disable this feature, execute uninstall_appeon_cache_ORACLE.sql.
Microsoft SQL Server	To enable this feature, execute install_appeon_cache_MSSQL.sql.
	To disable this feature, execute uninstall_appeon_cache_MSSQL.sql.
ASE	To enable this feature, execute install_appeon_cache_ASE.sql.
	To disable this feature, execute uninstall_appeon_cache_ASE.sql.
SQL Anywhere	To enable this feature, execute install_appeon_cache_ASA.sql.
	To disable this feature, execute uninstall_appeon_cache_ASA.sql.
SAP IQ	To enable this feature, execute install_appeon_cache_IQ.sql.
	To disable this feature, execute uninstall_appeon_cache_IQ.sql.
DB2	To enable this feature, execute install_appeon_cache_DB2.sql.
	To disable this feature, execute uninstall_appeon_cache_DB2.sql.

Table 5.8: SQL files for each database server

# **Important notes:**

- 1. The SQL file for Oracle database does not work with 8i databases, though it works with 9i, 10g, and 11g databases.
- 2. Executing the SQL files provided by Appeon is the same as executing any other SQL files, but you need to be aware of the following notes:
  - If a database server has multiple users, executing the SQL file under the login of one user will be effective for that user only. To make sure all users can use the DataWindow data-caching feature, you should use different logins to execute the SQL file.
  - When you execute the SQL for a database server, the current login user of the server must have the right to execute stored procedures and create functions.

• There are two ways to execute SQLs in a database server - from the database server console or from the command line. Sometimes one way will fail while the other works. For example, executing the SQL for Microsoft SQL Server from the command line may result in "parameter -D" error, while executing the SQL from the server console is successful, if the server computer has both Microsoft SQL Server and SAP ASE server installed.

#### Configuration required for Web servers

The configuration of Web server is required for Web server cache only.

If the application server is also used as the Web server, you do not need to do any special configuration, and the DataWindow data-caching feature is automatically enabled for the Web server.

If you use a third-party Web server as the Web server, you need to configure Web server for the DataWindow data-caching feature. For detailed instructions, refer to the Web Server Configuration Guide in PowerServer Help.

#### Configuration required for AEM

This section takes the sales\_application\_demo as an example to show configuration in AEM that will enable the DataWindow Data Cache at the PowerServer and/or the client.

Step 1: Select **Application** > **Performance** > **DataWindow Data Cache** on the left pane of the AEM Console. The DataWindow Data Cache page displays on the right pane of the Console.

Step 2: Click "sales\_application\_demo" listed in the "Application Name" column of the table. The sales\_application\_demo page displays.

#### Figure 5.111: DataWindow Data Cache for sale\_application\_demo

	AEM Console > Application > Cache > DataWindow Data Cache > [sale	es_application_demo]				
Ξ	Dynamic-DW SQL Cache					
	Specifies whether to cache the "select *" syntax or syntax of this type for dynamic DataWindow objects. When selecting "YES", "select *" syntax is cached; it will boost performance, but it will not be refreshed when the table structure changes dynamically. When selecting "NO", the syntax of this type will not be cached.Note: Normal cache functionalities of other types of sql syntax (not including "select *" syntax) will not be influenced by these configurations.					
	🔘 Yes 🖲 No					
Ξ	Application Cache					
	Data retrieved into DataWindow objects can be cached at the Web server or the client. Caching can significantly reduce server load and network traffic, boosting performance and scalability.					
	Enable Cache 🔲 Server Side 📄 Client Side (Browser)					
DataWindow Object Cache						
	DataWindow Object Cache	DataWindow Object Cache				

Step 3: In the **Application Cache** table, select the **Server Side** option or **Client Side** (**Browser**) option to enable the cache setting for the application DataWindows.

Step 4: In the **DataWindow Object Cache** table check the DataWindow object(s) on which you want to have the data-caching feature.

You cannot select different DataWindow objects for server cache and client cache, for example, you cannot select DataWindow object A for server cache only while object B for client cache only, instead, you should select object A and/or B for both.

Notes: 1) If a DataWindow object has a Child DataWindow object, its Child DataWindow will also be listed in the table. Checking either of them will enable the data caching for them both. 2) It is recommended that you check the DataWindow objects that do not have frequent data updates, and leave unchecked the DataWindow objects that have frequent data updates.

Step 5: Click the **Save** button to save changes.

# 5.4.9 Client Security

The Client Security tool in AEM is used to configure the User Authentication and Appeon Workspace securities. This tool is only effective when the <u>Security Toggle</u> is on in System Security.

Figure 5.112: Client Security

AEM Console	Welcome > Applica	<u>Welcome &gt; Application &gt; Client Security</u>		
r≕Welcome III:-Server III:-Application	Client Security	Client Security Contains the security settions for the deployed application and the Appeon Workspace client		
Configuration Summary 	User Authentication	Enables or disables security on a per-application basis and assigns access privileges to various security groups defined in LDAP or the Group Management of AEM.		
Client Features	Appeon Workspace	Enables or disables security on a per-application basis and assigns access privileges to various security groups defined in Appeon Workspace Group.		
Endient Security				

# 5.4.9.1 User Authentication

User Authentication is a tool to configure the security of the Appeon deployed applications. All the deployed applications are listed in the tool and are configured individually.

Figure 5.113	Application	Security
--------------	-------------	----------

AEM Console		<u>Welcome</u> > <u>Application</u> > <u>Client</u>	Security > User A	Authentication	
Welcome Server  Application Configuration Summary	Ē	Application Security The user authentication settings will be ignored and the user will not be required to log in if the Security Toggle in System Security is set to Off.			
Local Database		Application Name	Configured Groups	User Authentication	
Web Browser		sales	0	Security Off	
Client Features		acf	0	Security Off	
Performance		codeexamples	0	Security Off	
LimClient Security     User Authentication		order	0	Security Off	
Appeon Workspace		sapteched	0	Security Off	
III muune u resizing		youhoops	0	Security Off	

# 5.4.9.1.1 Viewing the current settings

1) View the current application security settings for all applications available in the User Authentication page.

• Application Name -- Lists the names of all the deployed applications. The names are automatically registered with AEM when an application is deployed by PowerServer Toolkit to the PowerServer.

• Configured Groups -- The number of groups with access rights to the Appeon Web application or the Appeon mobile application.

To view the names of the groups, click the link at the application name. To view details of the groups, go to the <u>Group Management</u> page.

• User Authentication -- Shows the security mode for the user authentication. This is only effective when the <u>Security Toggle</u> is on in System Security.

"Security on" explicates that the user will be prompted to enter the user name and password when accessing the selected application, while "Security off" requires no user name and password for the application access. You can click the link of an application name listed in the User Authentication table and switch the security mode in the page that displays subsequently.

2) View the details of the current application security settings for a single application, by clicking an application. The detailed security settings for the selected application are displayed.

# Figure 5.114: Detailed security settings for an application

1	<u>Welcome &gt; Application &gt; Client Security</u> > <u>User Authentication</u> > [ codeexamples ]				
⊟	User Authentication				
	User Authentication: <ul> <li>Security Off</li> <li>Security On</li> </ul>				
	Security Permissions				
	If the Security Type is set to LDAP Security, all user groups configured Security, all user groups configured in Group Management will be list	I in LDAP are listed in the table below. If the Security Type is set to Appeon ed below.			
	Unassigned Groups	Assigned Groups			
	Domain Admins Enterprise Admins Group Policy Creator Owners HelpServicesGroup	>>>>			
	IIS_WPG Schema Admins sg ▼				
	Save				

As the following table shows, different application security settings determine different security behaviors in an Appeon application.

User Authentication	A Given Group	Security behaviors in an Appeon application
Off	Assigned Unassigned	All users can access to an Appeon application without being prompted for a user name or password.
On	Assigned	Users of an assigned group have access rights to a Appeon application and they are prompted for

Table 5.9: Application security settings and security behaviors in an Appeon application

User	A Given Group	Security behaviors in an Appeon application
Authentication		
		user names and passwords when loading an Appeon application.
		For offline applications, you are only prompted for user names and passwords when connecting to the database.
	Unassigned	Users of an unassigned group do not have access rights to the Appeon application.

# 5.4.9.1.2 Modifying the security settings of an application

The user can enter the security-setting page of the application by clicking an application name link on the User Authentication page.

With the LDAP security type selected, the security-setting page automatically loads the latest user and group information from the specified LDAP server. If changes are made to users and groups at the LDAP server, you can use the *Refresh* button (on the Web browser toolbar) to include the latest update to the page.

With the Appeon security type selected, the security-setting page loads user and group information from AEM Group Management and User Management.

In this page, you are able to:

1. Skip the system login window when loading the application

Set the user authentication to **Security Off** in the Application Security group box. By default, the "Security Off" option is selected. This assumes that all users can access an application without user authentication.

2. Display the system login window before loading the application

Set the user authentication to Security On by selecting the Security On radio button.

3. Display a custom login window before loading the application

Set the user authentication to **Security Off** in the Application Security group box; keep the System Security setting as On and set the Security Type setting to LDAP Security in the System Settings tool; write codes in the PowerBuilder program to call "appeonldaplogon" function to display a custom login window for LDAP security login. For details, refer to Section 2.3.2.16, "AppeonLDAPLogon function" in *Workarounds & API Guide*.

4. Assign a group to the application

Select a group from the Unassigned Groups list. Click the forward button (>>>) to shift the group to the Assigned Groups list.

By default, all the groups are listed in the Unassigned Groups list. The groups are read from the PowerServer (if the security type is Appeon security) or the LDAP server (if the security type is LDAP security) in use.

5. Unassign a group from the application
Select a group from the Assigned Groups list. Click the back button ("<<<") to shift the group to the Unassigned Groups list.

Click the **Save** button to apply changes.

#### 5.4.9.2 Appeon Workspace

Figure 5 115.	Annoon	Workspage	application	coourity
rigule 5.115.	Appeon	workspace	application	security

AEM Console		Welcome > Application > Client Security > Appeon Workspace						
Welcome Server -Server -Application Configuration Summary -Transactions -Transactions -Transactions	E	Appeon Workspace All deployed applications are listed below. Appeon Workspace security settings for each application are configured individually. The application Appeon Workspace security settings are ignored if Appeon Workspace Security Mode in System Settings of AEM is set to Off.						
PB Features		Application Name	Configured Groups	User Authentication				
		sales	0	Security Off				
Data Transfer     Performance		acf	0	Security Off				
				codeexamples	0	Security Off		
			order	0	Security Off			
Hobile UI Resizing		sapteched	0	Security Off				
	~	<u>vouhoops</u>	0	Security Off				

#### 5.4.9.2.1 Introduction to Appeon Workspace

Appeon Workspace is a free native mobile application which is publicly available on the online app store. As its name suggests, it is a workspace provided by Appeon to simplify distributing, running and managing the Appeon native mobile applications. In Appeon Workspace, you can download and run the Appeon native mobile applications conveniently, and can configure a number of settings for the application, such as log, title bar, etc. For detailed information on Appeon Workspace, please refer to the Appeon Workspace User Guide.

Since Appeon Workspace can install the native mobile application from PowerServer, you may want different applications on the same PowerServer to be installed by different mobile devices, for example, you may probably want application A to be installed by the mobile device from company A only, and application B by the device from company B only, etc. In such cases, you can take advantage of the Appeon Workspace security tools in AEM to control each application's access rights. You can follow these procedures to configure the tools:

- 1. Adding an Appeon Workspace client: see Adding an Appeon Workspace client for details.
- 2. Adding an Appeon Workspace group and assigning the client to the group: see <u>Adding an</u> <u>Appeon Workspace group</u> for details.
- 3. Enabling the Appeon Workspace security and assigning the app accessibility rights to the group: see <u>Setting Appeon Workspace security</u> and <u>Assigning access permissions</u> for details.

#### 5.4.9.2.2 Setting Appeon Workspace Security

Appeon Workspace security settings for each application are configured individually.

Step 1: Click on an application name, and the Appeon Workspace page appears.

#### Figure 5.116: Configuring Appeon Workspace

1	<u>Velcome &gt; Application &gt; Client Security&gt; Appeon Workspace &gt;  </u>	codeexamples ]
	Appeon Workspace	
	Appeon Workspace Security Settings: $\$ Security Off $\$ Security On	
Ξ	Appeon Workspace Permissions	
	All groups configured in Appeon Workspace Group are listed below.	
	Unassigned Groups	Assigned Groups
	AppeonTest	Ţ
	Save	

Step 2: Select the **Security Off** radio button to set the security off, or select the **Security On** radio button to set the security on. This is only effective when the <u>Security Toggle</u> is on in System Security.

If the security is set to On, only assigned users have rights to access the application.

#### 5.4.9.2.3 Assigning access permissions

To assign access right of an application to a specific user group, click on the application. In the **Appeon Workspace Permissions** table, move the group you intend to assign access right to in the **Unassigned Group** list box to the **Assigned Group** list box.

If you want to deprive access right from a specific group, just move it from the **Assigned Group** list box to the **Unassigned Group** list box.

**Note**: For offline applications that start up offline (the startup mode is Offline), if the <u>Apppeon Workspace Security Settings</u> option is set to **Security On**, and if the application runs on an unassigned device, all operations that need to access the PowerServer are forbidden.

## 5.4.10 Mobile App Distribution

#### 5.4.10.1 Requirements

#### 5.4.10.1.1 iOS IPA file requires to be installed through HTTPS

Staring from iOS 7.1, Apple requires the enterprise apps manifest file (.plist) to be served over HTTPS. Install through HTTP will fail. Therefore you would need to follow documentations from the Web server vendor to configure the Web server to support HTTPS.

#### 5.4.10.1.2 File size requirement

This section is required for IIS (7.5 thru 10) and WildFly 10.0. Skip this section if you are using the other Web server (such as JBoss EAP 6.1, JEUS, WebLogic, WebSphere, etc).

Before uploading the app package to the PowerServer Web Server, please be beware that the server has limitations on the file size to be uploaded, therefore you would need to follow the instructions below to configure a proper file size.

#### To change the default file size in WildFly 10.0:

Open the standalone.xml file (in %jboss home%/standalone/configuration/) with a text file editor, find the settings according to the protocol for accessing AEM and uploading file:

• If using HTTPS to access AEM and upload file, locate the following line and configure "max-post-size" for the maximum file size to be uploaded, for example, 104857600 (which indicates 100 MB).

```
<https-listener name="default1" max-post-size="104857600" security-realm="ManagementRealm" socket-binding="https"/>
```

• If using HTTP to access AEM and upload file, locate the following line and configure "max-post-size" for the maximum file size to be uploaded, for example, 104857600 (which indicates 100 MB).

```
<http-listener name="default" max-post-size="104857600" socket-binding="http"
redirect-socket="https"/>
```

#### To change the default file size in IIS (7.5 thru 10):

1. In the **IIS Manager**, select the Web site where PowerServer is installed, and then select the **Configuration Editor** feature.



Figure 5.117: IIS -> Configuration Editor

2. Open the **Configuration Editor** feature, select or input *system.webServer/ security/requestFiltering* in the **Section** field, and then modify the value of the maxAllowedContentLength attribute under **requestFiltering** to a proper value, for example, 104857600 (which indicates 100 MB). Click **Apply** to save changes.

Actions	
Apply	
config • Cancel	
Generate Script	
Configuration	
Search Configu	iration
Section	(
Lock Section	
I All IC A	
'Attribute	entLength
Lock Attribute	
Help	Help
Online Help	
h	
]	

Figure 5.118: requestFiltering -> maxAllowedContentLength

#### 5.4.10.2 Upload standalone mobile apps and Appeon Workspace

After you package a standalone mobile app or Appeon Workspace, you can upload the file to the PowerServer and then send the download URL to your users. If you have uploaded an updated file to overwrite the existing file, your users will get automatically updated, as Appeon Workspace and the standalone mobile app will check for the updates and compare the version/build number once it connects with PowerServer.

For how to package a standalone mobile app or Appeon Workspace, refer to Section 10.3, "Packaging a stand-alone mobile project" in *PowerServer Toolkit User Guide* and Section 10.4, "Customizing and packaging Appeon Workspace" in *PowerServer Toolkit User Guide*.

For how to make the auto-upgrade feature of Appeon Workspace and standalone mobile app to work, refer to Section 3.2.1, "Enabling auto-upgrade of Appeon Workspace" in *Appeon Workspace User Guide*.

#### To upload the standalone mobile app and Appeon Workspace to the server:

Step 1: Select the installer type for the standalone mobile app or Appeon Workspace: APK (.apk) for the Android device, or IPA (.ipa) for the iOS device.

Step 2: Click **Browse** to select the installer file.

#### File name

If you create the installer file by using the PowerServer ToolKit Package tool, you should keep the file name by default. A valid file name should look like this: *App Name-App Identifier-BuildNumber*.apk or *App Name-Bundle ID-BuildNumber*.ipa, for example, sales-appeon-9\_0\_1681\_00.ipa. Note that any dot (.) in *App Name* (or *Display Name*) or *App Identifier* (or *Bundle ID*) shall be replaced by an underscore(\_). For more about the file name, refer to Section 10.3, "Packaging a stand-alone mobile project" in *PowerServer Toolkit User Guide* and Section 10.4, "Customizing and packaging Appeon Workspace" in *PowerServer Toolkit User Guide*.

#### Figure 5.119: Upload the installer

1	Nelcome > Applic	ation > Mobile App Distribution > Stand-alone Mobile Projects/Appeon Workspace							
_									
E	Upload Stand-alone Mobile Projects/Appeon Workspace to PowerServer								
	After you package a stand-alone mobile project or Appeon Workspace with the PowerServer Toolkit Package tool, please deploy the generated IPA or APK installer to PowerServer for distribution. When you upgrade PowerServer, you shall re-package the project or Appeon Workspace, and deploy the new installer to PowerServer to override the existing one. This way the version at mobile clients can be automatically upgraded.								
	Installer Type	O APK (for Android devices) O IPA (for iOS devices)							
	Installer	Browse							
	Upload								

Step 3: Click **Upload** to upload the selected file to the PowerServer.

During this process, the file will be uploaded to the PowerServer Web server, and will be deployed as a WAR file if PowerServer is installed on top of JBoss, WebLogic, and WebSphere. The deployment process is automatic for JBoss, WebLogic (development mode), and JEUS, but **not** automatic for WebLogic (production mode) and WebSphere, in this case you will need to manually deploy it just as how you deploy the other applications.

If any error occurs due to the file size, please resolve the error by following instructions in the File size requirement.

Once the installer file is uploaded successfully, the download URL and QR code of the installer will be available from the table below.

A built-in Appeon Workspace for the Android device (App Name: Built-in AWS) is provided by Appeon by default. You can view and change the download URL of this built-in Appeon Workspace but cannot remove it.

Figure 5.120: View and edit the installer information

Star	Stand-alone Mobile Projects/Appeon Workspace Installers									
Tabi disti	Table below shows the latest versions of stand-alone mobile project or Appeon Workspace installers that exist in PowerServer. You can distribute the download URL or QR Code to users.									
	App Name For iOS/Android Effective Build No. APP ID Deploy Date Download URL/QR Co									
	Built-in AWS	Android	8.0.1075.00		2016-08-30 11:24:33	View/Edit				
	My Workspace Android 8.0.1075.00 com.appeon.myworkspace 2016-08-30 View/Edit									
R	Remove Checked Applications									

To get the download URL and the QR code of the installer:

Step 1: Click the **View/Edit** link of the installer in the table. You will be directed to the **Download URL or QR Code** page.

Figure 5.121: Download URL of the installer

Download URL	Download URL							
There is a default URL for the selected installer. If the default URL is not accessible by your users, you can update the server URL in it, and click Save. If you want to reset the URL to its default value, click Reset.								
App Name	My Workspace							
For iOS/Android	Android							
Effective Build No.	8.0.1075.00							
APP ID	com.appeon.myworkspace							
Deploy Date	2016-08-30 11:24:46							
Download URL	http://localhost:80/aws/packages/My_Workspace-com_appeon_my							
Reset Save								

Step 2: Make sure the download URL is accessible to your users. By default the IP address/ domain name and port number of PowerServer will be used in the download URL of the installer.

You can change the download URL if the server IP or port number cannot be accessed by your users (for example, a "localhost" URL is not accessible to users); or if you have set up another Web site to host the installer, you will need to manually copy the installer over and change the download URL to point to the correct location.

For the Android installer, you should set the download URL of the APK file.

For the iOS installers, you should set the download URLs pointing to different files for different client types: for the installer to be downloaded and installed on the mobile device, you should set the download URL of the **PLIST** file in the **For Download on Mobile Devices** field; while for the installer to be downloaded to the Windows PC or Mac (and later synchronized to the mobile device via iTunes), you should set the download URL of the **IPA** file in the **For Download to iTunes on Desktops** field.

For the built-in Appeon Workspace, the download URL is bound to the Appeon Workspace download center by default; you can de-select the **Bind the above URL to Download Center** box to unbind them.

Figure 5.122: Download URL of the installer



Once you change the URL, click Save to save the change and refresh the QR code.

Step 3: Click the **Download** button to download the image file of the QR code in JPG/EPS/ SVG format and send the image file to your users, or click the **Copy QR Code to Clipboard** button to copy and embed the image of QR code in your download web page.

The end user can use a scanning tool to scan the QR code to directly download and install Appeon Workspace on their mobile devices.

#### Figure 5.123: QR code of the installer

Download or Copy QR Code						
Here is the QR code created for your se	election (Appeon Workspace or applications). Your users can scan the code using their Android or iOS devices.					
	Use the following HTML code to embed the QR code on your website.					
	<img <br="" height="200" id="ImageQrcode" src="GenerateImage.aspx?&lt;br&gt;c=http://localhost:80/aws/8.0.1026.00.plist&amp;type=aws" width="200"/> align='middle' />	*				
	Copy QR Code to Clipboard					
Download						

#### 5.4.10.3 QR code generation for mobile application(s)

You can also generate the QR code for those mobile apps that you deployed to PowerServer using the Appeon Deployment Wizard. For how to deploy the mobile app using the Appeon Deployment Wizard, refer to Chapter 6, *Deploying PowerBuilder Applications* in *PowerServer Toolkit User Guide*.

#### To generate the QR code for mobile application(s):

Step 1: In the **Web Server URL** field, input the IP address or domain name of the Web server where mobile apps are deployed.

Step 2: From the application list, select one or more mobile apps to be included in the QR code.

Step 3: Click the **Get QR Code** button to download or copy the QR code generated for the selected app(s).

Figure 5.124: QR code generation for apps (mobile only)

QR C	QR Code Generation for Applications (Mobile Only)						
You o creat	You can create QR codes for deployed applications, and distribute the codes to your mobile application users. The QR code created for application(s) carries one or more application URLs.						
Web	Web Server URL (IP or domain): http://192.0.3.150:80						
	Application Name						
<b>V</b>	sales						
	acf						
	codeexamples						
<b>V</b>	order						
	sapteched						
Ge	Get QR Code						

#### To download or copy the QR code:

You can click the **Download** button to download the image file of the generated QR code in JPG/EPS/SVG format and send the image file to end users, or click the **Copy QR Code to Clipboard** button to copy and embed the image of QR code in your download web page.

The end user can open Appeon Workspace and use the scan tool in Appeon Workspace to directly download and install mobile application(s). For more about the scan tool in Appeon Workspace, refer to Section 4.1, "Adding applications" in *Appeon Workspace User Guide*.

Figure 5.125: Download or copy QR code of the installer



# 5.5 Mobile UI Resizing

Mobile UI Resizing is a set of tools for configuring mobile devices and resizing application windows. There are two sets of tools: Screen Size and Window Size.

Figure 5.126: Mobile UI Resizing

AEM Console		<u>Welcome</u> > Mobi	le UI Resizing		
	*	Mobile UI Resizing Configures the disp	lay size and the resizing rules of the mobile screen and the application window.		
Screen Size Window Size		Screen Size	Configures the screen size (measured in points) of the devices. Once a device is added successfully, you will not be able to change the screen details except for the Applicable Type field. The devices that Appeon have claimed to support cannot be deleted.		
				Window Size	Lists all the deployed applications and configures the resizing rules for each individual window in the application.

## 5.5.1 Screen Size

Screen Size is a tool for managing the Appeon-supported mobile devices. It allows adding, editing and removing devices. But those devices which PowerServer Mobile claims to support cannot be modified or deleted. All the supported device screen size (measured in points) added are listed below.

AEM Console		Welcome	> <u>Mobile</u>	UI Resizing > Scree	n Size			
"Welcome     "B" Server     "     "Application     "Hobile UI Resizing     "Screen Size	Ê	Screen S Configure devices t	Screen Size Configures the screen size (measured in points) of the devices. Once a device is added successfully, you will not be able to change the screen details except for the Applicable Type field. The devices that Appeon have claimed to support cannot be deted.					
IWindow Size							1/1	Previous Next 1 Go
		Actions		Screen Size (Points)	Status Bar Height (Points)	Applicable Type		
		📴 Edit	🖹 Delete	480*320	20	iPhone 4/4S & iPod Touch 4		
		📴 Edit	🖹 Delete	568*320	20	iPhone 5 & iPod Touch 5 & iPhone 5s		
		📴 Edit	🖹 Delete	640*360	20	samsung Galaxy		
		📴 Edit	🖹 Delete	1024*768	20	iPad & iPad mini		
		📴 Edit	R Delete	1334*750	20	iPhone 6		
	~	📴 Edit	🖹 Delete	1920*1080	20	iPhone6 plus		
		Add De	evice					

Click the **Edit** button to view the details of the device screen size.

#### Figure 5.128: Screen details

	Welcome > Mobile UI Re	sizing > <u>Screen Size</u> > View Device		
⊟	View Device			
	The details of the device scre	en are listed below.		
	Display Size :	1024 * 768 Points		
Status Bar Height: 20.0 Points				
	Full Screen:	1024 * 748 Points (Landscape)		
		768 * 1004 Points (Portrait)		
	Applicable Type:	iPad		
	Back			

## 5.5.1.1 Adding a device

On the **Screen Size** page, the supported devices (measured in points) are configured by default, such as iPad 2/3/4/Mini/Air, iPhone 4/4S/5/5C/5S/6/6 Plus, iPod touch 4/5 etc. You can view the settings by clicking the associated **Edit** button, but cannot edit or delete these default devices.

You can also add a device which is not listed by default.

To add a new device, follow the following steps:

Step 1: Click Add Device, and the Add Device page appears.

Add Device						
Specifies the device information.	Specifies the device information.					
Display Size:	0	× 0	Points			
Status Bar Height:	0.0	Points				
Full Screen:	0.0	× 0.0	Points (Landscape)			
	0.0	× 0.0	Points (Portrait)			
Applicable Type:						
Save and Add Save						

Step 2: On the Add Device page, enter the following values:

Settings	Descriptions
Display Size The size of the device screen.	
	You should be able to get this information from the device specification provided by the manufacturers.
	Or you can use the device to access a deployed application and use the screen size that is automatically loaded.
	Refer to <u>Automatically adding a device to an application</u> for details.

Status Bar Height	Height of the system status bar.
	a. <b>iOS devices</b> : The status bar is 20 points high.
	b. Android devices: The status bar height is subject to the devices. Developers may need to write scripts to get the height first.
	The height of the system status bar will be automatically deducted when calculating the available screen space for the application window.
Full Screen	The full screen size will be calculated automatically once you input the above values.
Applicable Type	Enter the device types that the specified size support.

Step 3: Click the **Save** button to add the device or click **Save and Add** to save the device and begin to add another one.

#### 5.5.1.2 Editing a device

You can always edit the applicable type of devices of an added device on the Edit Device page in AEM.

To edit an added device:

Step 1: click **Edit**, and make the changes you intend to on the **Edit Device** page.

#### Figure 5.130: Edit a device

Ī	Welcome > Mobile UI Resizing > Screen Size > Screen Details					
Ξ	5 M 8 .					
	Edit Device					
	The details of the device screen are	e listed below.				
	Display Size:	1920 × 1080 Points				
	Status Bar Height:	0 Points				
	Full Screen:	1920 × 1080 Points (Landscape)				
		1080 × 1920 Points (Portrait)				
	Applicable Type:	Galaxy Note 3				
	Save					

Step 2: Click **Save** to save the changes.

#### 5.5.1.3 Deleting a device

To delete a device, click **Delete**, and then click **OK** to confirm the deletion in the popup dialog box.

## 5.5.2 Window Size

When you are developing an application for mobile device, you probably want to make it universal and run on various mobile devices, such as iPad, Android tablets etc. There are basically two ways to achieve this:

- Method 1: Resize the windows and controls at runtime to fit with the various screen sizes. You will be required to remember all these screen sizes, and write code to resize the windows and controls.
- Method 2: Use this Window Resizing tool to automatically scale the windows and its UI controls (except for controls in DataWindow objects) to fit with a wide range of mobile devices. This tool works especially well if the mobile devices have similar screen sizes, such as iPad and the Android tablets, or iPhone and the Android smart phones. See this section for details.

#### Figure 5.131: Window size

AEM Console		<u>Welcome</u> > <u>Mobile UI Resizing</u> > Window Size					
Welcome Server Application Hoppile UI Resizing	E	Window Size Lists all the deployed applications and	d provides the configurat	ion for each individual window in :	an Appeon mobile application.		
Screen Size		Application Name	NumberofWindows	Number of Configured Devices			
<u>milen ole</u>		acf	0	0			
		<u>codeexamples</u>	0	0			
		order	0	0			
		sales	50	3			
		sapteched	0	0			
		<u>vouhoops</u>	0	0			

#### 5.5.2.1 Configuring size for all windows

Click on the application name you want to configure, and the Screen Size table appears.

#### Figure 5.132: Screen size list

V	Welcome > Mobile UI Resizing > Window Size > [codeexamples]								
Ξ	Coroon	Sizo							
	Configures to automatically adjust the size of all windows of the surrent application								
	1/1 Previous Next 1 Go								
		Screen Size (Points)	Status Bar Height (Points)	AutoFit	Applicable Type				
		480*320	20	PB Design Values 💌	iPhone 4/4S & iPod Touch 4				
		1024*768	20	PB Design Values 💌	iPad				
	Add	Delete Save							

In the Screen Size table, you can:

1. **Add a device**: Click the Add button and select a device from the dropdown list box that appears.

The devices that Appeon claims to support and that you specified in <u>Screen Size</u> are listed for choices.

#### Automatically adding a device for an application

When a mobile device accesses the deployed application, the device will be automatically registered and the device screen size will be saved into the **Screen Size** table for the application if it is not registered. If the application UI is not properly displayed on a particular device, you can configure the window size for this particular device.

- 2. **Delete devices**: Check the checkboxes associated to the device(s) you want to delete and click **Delete**.
- 3. **Configure size for all windows**: You can specify one of the autofit modes which will automatically adjust all windows of the application from the AutoFit dropdown list box associated with the device, as shown in the following figure.

#### Figure 5.133: Autofit mode

AutoFit
PB Design Values
AutoFit to Full Width
AutoFit to Full Height
AutoFit to Full Screen
PB Design Values

The modes and the corresponding descriptions are listed in the following table.

Mode	Descriptions
PB Design	Windows will be displayed in the original size on the target device.
Values	This means windows will not be scaled, if the window is wider and/or longer than the screen, you would need to scroll to view the remaining part.
AutoFit to Full	Windows will be displayed in full screen in the X direction only.
Width (X axis)	This means, windows will be scaled up or down in both the X and Y direction, until they reach the same width as the device screen, but probably not the same height, therefore, if the window is higher than the screen, you will need to scroll vertically to view the remaining part of the window.
AutoFit to	Windows will be displayed in full screen in the Y direction only.
Full Height (Y axis)	This means windows will be scaled up or down in both the X and Y direction, until they reach the same height as the device screen, but probably not the same width, therefore, if the window is wider than the screen, you will need to scroll horizontally to view the remaining part of the window.
AutoFit to Full	Windows will be displayed in full screen in both the X and Y directions.
Screen (X & Y axis)	This means windows will be scaled up or down to have the same height and the same width as the device screen, therefore, you can view the

## Table 5.10: Autofit mode

Mode	Descriptions
	entire window and all of its controls in the device screen without needing
	to scroll.

Select one mode from the AutoFit options, and then click Save.

Once you have clicked **Save**, all windows of the application will be adjusted automatically by the selected mode.

Note: if new windows are added to the application, you will need to click **Save** again to manually apply the selected autofit mode to the new windows, otherwise, the new windows will be displayed in the original size (the PB design values), not in the selected autofit mode.

#### 5.5.2.2 Configuring size for an individual window

After you set the autofit mode for the application, all windows of the application will be adjusted by the selected mode, if any window needs to be adjusted differently, you can proceed to configure the size of each individual window in the **Windows List** table.

In the **Windows List** table (**AEM** > **Mobile UI Resizing** > **Window Size** > *Application Name*), all windows of the application is listed by default, including its original size in PB and the size in the selected device(s).

Clicks the window name to configure the size of each individual window. All the windows of the current applications are listed below.Show All WindowsWindow NameFilterPrevious 1/20 Next1GoWindow NamePB (PBU)iPad (Points)iPhone 4/4S & iPod Touch 4 (Points)Phone 5 & iPod 7 5 (Points)w 9k2350.0*1680.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw about1659.0*804.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PB	Window List Clicks the window name to configure the size of each individual window. All the windows of the current applications are listed below.						
Show All WindowsWindow NameFilterPrevious 1/20 Next1GoWindow NamePB (PBU)iPad (Points)iPhone 4/4S & iPod Touch 4 (Points)iPhone 5 & iPod Touch 5 (Points)iPhone 5 & iPod Touch 5 (Points)w 9k2350.0*1680.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw about1659.0*804.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw button report2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PB							
Window NamePB (PBU)iPad (Points)iPhone 4/4S & iPod Touch 4 (Points)iPhone 5 & iPod Touch 5 (Points)w 9k2350.0*1680.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw about1659.0*804.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in FBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PB	Show All Windows	<ul> <li>Window Name</li> </ul>	Filter	Previous 1/20 Next	1 Go		
w 9k2350.0*1680.0Same Size as in PBSame Size as in PBSame Size as in PBw about1659.0*804.0Same Size as in PBSame Size as in PBSame Size as in PBw ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw callcorm2862.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PB	Vindow Name	PB (PBU)	iPad (Points)	iPhone 4/4S & iPod Touch 4 (Points)	iPhone 5 & iPod Touch 5 (Points)		
w about1659.0*804.0Same Size as in PBSame Size as in PBSame Size as in PBw ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw callcom2862.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PB	<u>w 9k</u>	2350.0*1680.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w ancestor one dw2505.0*1456.0Same Size as in PBSame Size as in PBSame Size as in PBw blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw callcom2862.0*1780.0Same Size as in PBSame Size as in PBSame Size as in PB	w about	1659.0*804.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w blobtype2181.0*1696.0Same Size as in PBSame Size as in PBSame Size as in PBw button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw callcom2852.0*1780.0Same Size as in PBSame Size as in PBSame Size as in PB	w ancestor one dw	2505.0*1456.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w button report2606.0*1728.0Same Size as in PBSame Size as in PBSame Size as in PBw by copyreference2441.0*1744.0Same Size as in PBSame Size as in PBSame Size as in PBw call track2606.0*1580.0Same Size as in PBSame Size as in PBSame Size as in PBw callcom2862.0*1780.0Same Size as in PBSame Size as in PBSame Size as in PB	w blobtype	2181.0*1696.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w by copyreference         2441.0*1744.0         Same Size as in PB         Same Size as in PB         Same Size as in PB           w call track         2606.0*1580.0         Same Size as in PB         Same Size as in PB         Same Size as in PB           w callcom         2862.0*1780.0         Same Size as in PB         Same Size as in PB         Same Size as in PB	w button report	2606.0*1728.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w call track         2606.0*1580.0         Same Size as in PB         Same Size as in PB         Same Size as in PB           w callrom         2862.0*1780.0         Same Size as in PB         Same Size as in PB         Same Size as in PB	w by copyreference	2441.0*1744.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w collcom 2962 0*1780 0 Some Size as in DR Some Size as in DR Some Size as in DR	<u>w call track</u>	2606.0*1580.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
V Calconi	w callcom	2862.0*1780.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w calldl n tier 2857.0*1768.0 Same Size as in PB Same Size as in PB Same Size as in PB	<u>w calldll n tier</u>	2857.0*1768.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		
w calldotnet 2862.0*1780.0 Same Size as in PB Same Size as in PB Same Size as in PB	w calldotnet	2862.0*1780.0	Same Size as in PB	Same Size as in PB	Same Size as in PB		

#### Figure 5.134: Windows List

The size in the selected device(s) is determined by the selected autofit mode by default. When the autofit mode is changed, the size in the selected device(s) changes accordingly. For example, if you set the autofit mode to "Design value in PB" for iPad in the Device List table, then "Same size as in PB" will be displayed in the iPad column in the Window List table. If you configure the size of the individual window, then the new size for that window will be displayed. **View windows**: You can select a search criteria from search field dropdown list box to narrow down your search area or/and input a keyword in the **Window Name** text box, and then click **Filter** to view windows that meet your request. You can also use page navigator on the top right of the Window List table to view the windows.

**Restore defaults**: You can revert all the windows to default by clicking the **Restore Defaults** button at the bottom.

To configure an individual window of the application, do the following:

Step 1: In the **Window List** table, click on the window you intend to configure.

In the **Window Size Configuration** table that displays, you will see a device screen simulator in which you can preview how the window will be displayed and adjust its size. Now you are ready to resize the window in the screen emulator:

#### Figure 5.135: Screen emulator

	Welcome > Mobile UI Resizing > Window Size > [ codeexamples ] > w_about			
⊟	Window Size Configuration	n		
	Manually adjusts the window	size in the screen Emulator or clicks the full screen button (second from right) to automatically set the window size.		
	1024*768	Applicable Type ↑P. 0 ↔ 1 ⊷ T		
	480*320 568*320	IPad         Screen Information         Screen Size:       1024'768 (Points)         Status Bar Height:       20 (Points)         Window Information       ]         Width:       711 (Points)         Height:       393 (Points)         Scale proportionally         Save as Default Window         Configuration (The aspect ratio of the current window will be applied to all the other window will be applied to all the		

Step 2: Select a device name from the left column. The device(s) added to the Screen Size table are displayed. You need to configure the window size for each device separately.

Step 3: Select a displaying orientation (in landscape or in portrait) by clicking the orientation

icon (**1**). You need to configure the window size for each orientation separately.

Step 4: (Optional) enable the proportional scale by either clicking the proportional icon

( ) or check the **Scale proportionally** checkbox. We kindly recommend that you keep this enabled to avoid window deformations.

Step 5: Use one of the following to resize the window:

• Drag the corner of the window in the screen emulator; or

- Click the full width icon ( ), the full height icon ( ), the original screen icon
  - ), or the full screen icon ( ) above the screen simulator; or
- Input the desired numbers in the **Width** and the **Height** text box under **Window Information** respectively.

The new size and the window coordinates (X & Y axis) will be displayed simultaneously.

Step 6: (Optional) if you want to apply the new size to the remaining windows, check the **Save as default window configuration** check box.

Step 7: Either click the save icon ( ) above the screen simulator or the **Save** button at the bottom to save all the settings.

You will not be able to save the window size, if AEM prompted "Current aspect ratio will lead to window deformation!". AEM performed detection immediately after the window is resized, to help prevent the window and control being stretched or shrunk unreasonably.

**Notes**: Dragging the screen emulator to change a window coordinates does not work on windows that are opened using OpenSheet().

# Index

## A

About This Book, 1 active sessions, 90active transaction, 93 Adding a new group, 125 Adding a new user, 121 Adding a PowerServer, 98 Adding a transaction object mapping, 136 additional configuration for status monitor in cluster, 17 AEM Help, 89 AEM language, 88 AEM login, 119 AEM Tools, 86 AEM URL, 87 AEM User Guide, 86 AEM user name and password, 88 Allow user to select run mode, 154 Appeon Workspace, 175 Appeon Workspace Client, 122 Appeon Workspace Group, 127 Application, 133 Application Security, 82 application security, Application Server Cache, 166 Application Title, <u>151</u> Audience. 1

# С

Charset, 159 Charset options given in the Charset fields, 160 Checking status of PowerServer, 100 Client Features, 150 Client Logs, 156 client security, 172 Client Storage Location, 155 Cluster, 97 Cluster Server List, 98 Configuration Backup, 103 Configuration during application deployment, 5 Configuration during debugging, 6 Configuration during performance management, 6 Configuration during security management, 6 Configuration during server information management, 7 Configuration for emergency control, 7 Configuration required for AEM, <u>171</u> Configuration required for database servers, 170 Configuration stages and tasks, 4 Configuration summary, 133 configurations related with database connection, 82 configure appeonmonitor.bat, 9 configure appeonserver.bat, 12 configure monitor.props, 13 Configure status monitor, 9 Configuring database Charset for a data source, 159 Configuring transaction object mappings, 135 conflict resolution mode, 146

# D

data source parameters for ASE, 75 data source parameters for IBM DB2, 77 data source parameters for Informix, 78 data source parameters for Microsoft SQL Server, 76 data source parameters for MySQL, 78 data source parameters for Oracle, 77 data source parameters for PostgreSQL, 80 data source parameters for SAP HANA, 76 data source parameters for SAP IQ, 75 data source parameters for SAP SQL Anywhere, 74 data source parameters for Teradata, 79 Data Transfer, 158 Database Connection Setup, 20 database security, 82 DataWindow Data Cache, 168 DataWindow Object Cache Settings, 169 Decimal Precision, 146 Default run mode, 154 Deleting a group, <u>126</u> Deleting a user, <u>122</u> Deleting an existing transaction object mapping, 137 Deployment Security, 132 Deployment Sessions, 93 DLL/OCX Files, 144

Download timeout, <u>139</u> Dynamic transaction object to data source mapping, <u>81</u> Dynamic-DW SQL Cache, <u>168</u>

E

Editing an existing group, <u>126</u> Editing an existing user, <u>122</u> Encoding, <u>164</u> Error Message Mode, <u>153</u> Exit mode, <u>154</u>

 $\mathbf{F}$ 

Failover Settings, <u>100</u>

G Group Management, <u>124</u> Group management, <u>125</u>

H

Heartbeat backup, 101How to use this book, 1

## I

IE browser interface, <u>150</u> IE Compatibility, <u>148</u> If you need help, <u>3</u> incorporate Appeon security in PowerBuilder code, <u>84</u> information backed up by status monitor, <u>18</u> INI file Mode, <u>142</u> INI files, <u>141</u> INI files, <u>143</u> install mode, <u>145</u> Installing Appeon Workspace, <u>88</u>

## J

JDBC driver preparation, <u>21</u> JDBC requirement for transaction object mappings, <u>135</u>

## K

kill sessions and devices, 92

## L

LDAP Interface Settings, <u>130</u> LDAP Interface Settings in AEM, <u>131</u> Licensing, <u>104</u> Limitations, <u>130</u> Load Balancing Settings, <u>100</u> Local Database, <u>139</u> Log mode, <u>96</u> Logging, <u>94</u>

## M

Maintenance, <u>102</u> mobile app distribution, <u>176</u> Mobile UI resizing, <u>182</u> Modifying an existing transaction object mapping, <u>137</u> Modifying the PowerServer cache setting for an application, <u>167</u> Modifying the security settings of an application, <u>174</u> Multi-Thread Download, <u>165</u>

# P

PB Features, <u>140</u> performance, <u>165</u> PowerServer status monitor, <u>9</u> predefined data sources, <u>83</u> Product Activation, <u>103</u>, <u>104</u>

# R

Re-activation, <u>114</u> Re-configuring database auditing functionality, <u>85</u> Registry Mode, <u>140</u> Related documents, <u>1</u> Removing a PowerServer, <u>99</u> Renew Support, <u>117</u> Replace log files, <u>96</u> Request timeout, <u>139</u> Resources, <u>97</u> Retina Display, <u>158</u> roll back active transaction, <u>93</u> Run Mode, <u>152</u> Running PowerServer, <u>87</u>

# S

scope of configurations, <u>4</u> Screen Size, <u>182</u> Security Toggle and Security Type, <u>130</u> Server, <u>90</u> server configuration task, <u>4</u> Server Security, <u>118</u> Session backup, <u>100</u> Session timeout, <u>138</u> Sessions, <u>90</u> set up connection cache, 25 set up data source, 25set up data source for JBoss, 54 set up data source for JEUS, <u>69</u> set up data source for NetWeaver, <u>66</u> set up data source for WebLogic, 25, 25, 33 set up data source for WebSphere, 39 set up data source for WebSphere 6.1, 39 set up data source for WebSphere 8.0, 43 set up data source for WildFly and JBoss EAP, 54 Start & Exit, 154 start status monitor, 18 Starting AEM, 87 Static transaction object to data source mapping, 82 Support, <u>117</u> Synchronizing AEM settings to servers in a cluster, 101 System Security, <u>129</u>

## Т

Three ways to launch AEM, <u>87</u> Timeout , <u>137</u> Transaction Objects, <u>135</u> Transaction timeout, <u>138</u> Transactions, <u>134</u>

## U

understand information in status monitor window, <u>18</u> Upgrade license, <u>116</u> use INI files for connection security, <u>83</u> use status monitor server, <u>18</u> User and Group Management at LDAP server side, <u>129</u> User Authentication, <u>172</u> User Management, <u>120</u>, <u>120</u>

# V

view active sessions, <u>91</u> view active transaction, <u>93</u> Viewing groups, <u>125</u> viewing logs, <u>94</u> Viewing the current settings, <u>172</u>

## W

Web Application Auto Update, <u>151</u> Web Application Theme, <u>151</u>