

# Contents

About the Authors .....	vi
Introduction by <i>Surekha Parekh</i> .....	vii

## DB2 11 for z/OS: Unmatched Efficiency for Big Data and Analytics

<i>by Julian Stuhler, Triton Consulting</i> .....	1
DB2 11 for z/OS: The Database for Big Data and Analytics.....	2
Efficiency .....	2
CPU Reductions.....	2
zEC12 Exploitation.....	6
Application Compatibility.....	8
Transparent Archiving .....	10
Temporal Data Enhancements .....	11
Global Variables .....	13
Variable Arrays.....	14
Java Stored Procedure Enhancements.....	14
pureXML Enhancements .....	16
Optimizer and Query Performance Improvements .....	17
Data Sharing Performance Enhancements .....	23
Utility Enhancements .....	25
Other Efficiency Enhancements.....	26
Resilience .....	27
Extended Log Record Addressing: Current Issues.....	28
Extended Log Record Addressing: DB2 11 Enhancements.....	29
Enhanced Dynamic Schema Change.....	30
BIND/REBIND Enhancements .....	31
Security Enhancements .....	32
Other Resilience Enhancements.....	34
Business Analytics .....	35
SQL Aggregation Improvements .....	35
IBM DB2 Analytics Accelerator Enhancements.....	37
Hadoop and Big Data Support .....	39
QMF 11 .....	42
Other Enhancements for Analytics Workloads .....	42
Upgrading to DB2 11 .....	43
DB2 Version Prerequisites .....	43

Other Prerequisites .....	43
Upgrade Timing.....	45
Upgrade Process and Impact .....	45
DB2 11 Customer Case Studies .....	47
BMW Group.....	47
Stadtwerke Bielefeld GmbH.....	48
JN Data .....	49
 <b>Improved Query Performance in DB2 11 for z/OS</b>	
<i>by Terry Purcell</i> .....	53
Predicate Indexability.....	54
Duplicate Removal.....	55
Hash Join and Sparse Index .....	57
Page Range Screening and Indexing for Partitioned Table Spaces.....	57
RUNSTATS Enhancements .....	59
Additional Performance Improvements .....	60
Summary .....	61
 <b>IBM DB2 Utilities and Tools with DB2 11 for z/OS</b>	
<i>by Haakon Roberts</i> .....	62
 <b>How DB2 for z/OS Can Help Reduce Total Cost of Ownership</b>	
<i>by Cristian Molaro</i> .....	65
Business Needs and DB2 TCO .....	65
DB2 and TCO.....	67
Reducing TCO Through Synergy with System z .....	69
DB2 Synergy with System z.....	69
Reducing TCO Through CPU Savings .....	70
DB2 10 CPU Savings and Performance Improvements .....	74
DB2 10 Performance Expectations .....	76
DB2 11 CPU Savings and Performance Improvements.....	77
DB2 11 Performance Expectations .....	78
Specialty Engines .....	79
DB2 10 and Specialty Engines.....	80
DB2 11 and Specialty Engines.....	80
Estimating zIIP Savings .....	80

Special Considerations for High zIIP Utilization.....	82
DB2 and zAAP on zIIP .....	82
Reducing TCO with Better Performance .....	83
Identifying Better Performance Opportunities.....	84
Getting Better Performance with REBIND .....	87
DB2 Plan Management.....	88
DB2 11 APREUSE(WARN) Enhancement .....	91
DB2 11 RELEASE(DEALLOCATE) Optimization .....	92
DB2 11 Application Compatibility and APPLCOMPAT .....	92
Case Study: Performance Benefits of REBIND .....	93
DB2 EXPLAIN At a Glance.....	94
DB2 10 High-Performance DBATs.....	95
Reducing TCO Through Storage Savings.....	96
DB2 Data Compression .....	98
DB2 Managed Disk Space Allocation.....	101
Case Study: Combined Effects of Data Compression and DB2 Managed Disk Space Allocation.....	102
Index Compression .....	106
Reducing TCO with Faster Analytics .....	108
IBM DB2 Analytics Accelerators.....	109
Leverage Legacy QMF Objects.....	111
Reducing TCO with Improved Scalability.....	113
DB2 10 Throughput Enhancements.....	113
DB2 Storage and Scalability.....	115
Data Sharing Member Consolidations.....	117
Conclusion .....	118