

Product Documentation

DBArtisan[®] XE Pro and DBArtisan[®] 8.7.5

New Features Guide

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NEW FEATURES SUMMARY

Unicode support

DBArtisan now includes Unicode support throughout the application, allowing you to work with data in different languages and display the text correctly on screen.

Datasource Explorer tree filtering

This release introduces a number of techniques for filtering the Datasource Explorer view. On-the-fly filtering lets you filter tree nodes as you work. Object filters, defined and enabled at either the DBMS or datasource level, let you filter display by object name/schema. Node filtering lets you hide or display object types by DBMS platform.

ISQL Editor updates

The SQL parsing components have been upgraded for this release. The new components provide the following benefits when creating or editing scripts:

- Increased performance Parsing activity is much faster than in previous releases.
- **Platform concurrency** The ISQL editor now supports syntax and features of the most recent DBMS versions supported by DBArtisan.
- Accuracy Syntax issues in previous releases of DBArtisan have been corrected.

New editor features are also provided. The ISQL Editor has been enhanced with a set of automated validation and code assistance features. On-the-fly syntax-checking locates and diagnoses syntax errors as you type. Semantic validation eliminates typographical errors and helps avoid outdated references in specified object names. Code assist analyzes statements as you type and offers intelligent suggestions with regard to object names

Query options customizing the execution environment can now be saved and loaded. The frequency with which the options are sent to the server has been optimized.

Microsoft SQL Server exploitation

Index support in DBArtisan has been upgraded to account for newer Microsoft SQL Server index functionality. You can now rebuild, reorganize, and disable indexes, primary keys, and unique keys. As well, when creating, dropping, or rebuilding indexes, primary keys, or unique keys, online options are available with these operations. This release also offers sparse columns, MAXDOP support, and page and row locking.

IBM DB2 for Linux, Unix, and Windows exploitation

DBArtisan now supports the following recent upgrades to IBM DB2 for Linux, Unix, and Windows functionality:

• IMMEDIATE and DEFERRED options when editing buffer pools

- Encoding scheme options of ASCII, UNICODE, or NONE for character or graphic string parameters in procedures and functions
- Object ownership transfer for object owners and users with SECADM authority
- Additional "history" deadlock event types for Event Monitors
- Inherit isolation level with or without lock request options on Structured Type methods

IBM DB2 for z/OS exploitation

This release offers the following DB2 for z/OS upgrades:

- Extended Truncate table support
- Table cloning actions
- Updated calculation and display of catalog table statistics
- Long object names
- Column size and default value modification with simple ALTER TABLE statements
- Compressed indexes, index key randomization, and expression-based indexes
- Universal tablespaces

Oracle exploitation

When creating or modifying tablespace datafiles, you can now set the availability of datafiles to either ONLINE or OFFLINE.

User interface changes and related features

The Datasource Explorer tree features a new look for this release. Functionality improvements include simpler connection, improved representation of ownership/containment, and more object actions available directly from the tree.

Continuing from previous releases, this release features reworked object management editors and wizards.

Additional currency or miscellaneous features

In response to customer requests, a number of new or enhanced features are now available:

- Export and import of datasource definitions.
- Removal of reliance on proprietary stored procedures for IBM DB2 for z/OS.
- The ability to start a server, pause a server, and continue after pausing against Microsoft SQL Server.
- A server shutdown Wait Time option against Sybase datasources.

TOP NEW FEATURES

Top new features for this release fall into the following functional categories:

- Database object management
- ISQL Editor
- Data editor
- Datasource Explorer updates
- Additional or miscellaneous features

DATABASE OBJECT MANAGEMENT

MICROSOFT SQL SERVER OBJECT MANAGEMENT ENHANCEMENTS

MAXDOP support in SQL Server Indexes

The wizards/editors for indexes and primary/unique keys now include a MAXDOP index operation property, limiting the number of processors used in parallel plan execution.

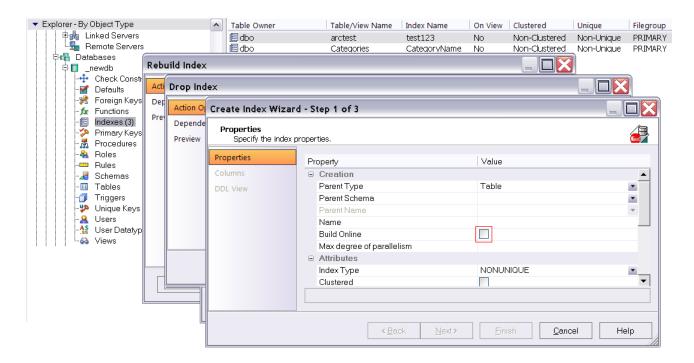
Properties	Property	Value	
Columns	Build Online		A
DDL View	Max degree of parallelism		

Rebuilding, Reorganizing, and Disabling Indexes, Primary Keys, and Unique Keys This DBArtisan introduces the ability to rebuild, reorganize, and disable indexes. The same operations are now available for primary keys and unique keys as well.

 Explorer - By Object Type 			•	Table Own			Table/View N		Index Name	On View	Clustered	Unique	Filegroup
□ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □ □			~		ier			ame					Filegroup
				🕒 dbo			arctest		test123	No	Non-Clustered	Non-Unique	PRIMARY
Remote Servers				🗉 dbo			Categories		CategoryName	e No	Non-Clustered	_ Non-Unique	PRIMARY
Databases □ □ _newdb		uild Inde	<										
Check Constr Defaults Foreign Keys	Acti	itteor Ba	nize l	ndex							_		_
-fx Functions -f Indexes (3)	Dep Pre	Action (ole Index									
Primary Keys		Depend Preview	Actio	n Options		1 ind	ex(es) to be d	isable	ed:				
-& Roles			Depe	endencies		dha C	lasses.IX_Classe		raciD				
- Rules			Previ	ew		ubu.c	Jasses.IX_Classe	s_cou	rseib				
- 🔏 Schemas													
-III Tables													
- Triggers													
- Unique Keys													
- <u>A</u> Users													
- 🙀 User Datatyp		<u>P</u> re											
- A Views													-
			E	review	Sch	iedule	< <u>B</u> ack		<u>N</u> ext > E	xecute	Cancel	Help	

Online options when creating, dropping or rebuilding indexes, primary keys, or unique keys

DBArtisan now offers ONLINE=ON clause options for operations against clustered indexes, primary keys, and unique keys. Create, drop, and rebuild operations can now be specified as online operations.



Similarly, when dropping a clustered index, primary key, or unique key from a table, you have the option to execute the drop as an online operation.

Action Options	1 index(es) to be dropped:					
Dependencies Preview	dbo.STUDENTS_EAUK1.dfsgdfg	8. 2↓				
		Drop Index Online				
		Online Specifies whether underlying tables and associated indexes are evailable for queries and data modification during the index constraint.				

Sparse columns

This release introduces support for Sparse columns. Defining a column as sparse optimizes storage of columns that allow NULL values. This property does not apply to the following data types: text, ntext, image, timestamp, geometry, or geography types

or to user-defined data types. Columns with default values, default or rule bindings, cannot be defined as sparse. Computed columns cannot be defined as Sparse, but the columns in the computed expression can be Sparse columns.

Pr	оре	erty	Value
Ξ	С	olumn Attributes	
	N	ame	EMPLOYEE_ID
	Co	omputed	
	Ξ	Datatype	
		Туре	char 🔹
		Size	1
	AI	low Nulls	
	Sp	parse Column	
	D	efault Collation	*
	D	efault∨alue	*
	Fi	II Rows with Default Value	
	Ξ	Bindings	
		Default Binding	•
		Rule Binding	
	С	omputed Column	
	C	omputed Expression	

Page and row locking in SQL Server indexes

The wizards/editors for indexes, primary keys, and unique keys now let you enable locking granularity at the page and row level.

Properties	Property	Value	
Columns	Attributes		
DDL View	Index Type	NONUNIQUE	
	Clustered		
	Ignore Duplicate Key		
	Statistics Recompute		
	Allow Row Locks		
	Allow Page Locks	\checkmark	

IBM DB2 FOR LINUX, UNIX, AND WINDOWS OBJECT MANAGEMENT ENHANCEMENTS

Ownership transfer

DBArtisan now lets an object owner or a user with SECADM authority transfer ownership of an object to another user. The new user is automatically granted the same privileges as the former owner. Ownership can be transferred on an object-by-object basis or you can transfer all objects currently owned by an individual user. You can transfer ownership of most DB2 object types.

Action Options Preview	Transfer ow	nership of 1 Proce		
	Schema DB2ADMIN	Name ADDTHRESHOL	Specific SQL090;	 注↓ Transfer Ownership New owner
	<	101	>	New owner The new owner of the object(s)

Deferred option for Buffer Pools

Previously only available in the Create Buffer Pool wizard, a **Deferred** property is now available in the Buffer Pool editor. It controls IMMEDIATE or DEFERRED update of the buffer pool.

Properties	Property	Value
Nodegroups	Creation	
Partitions	Name	
DDL View	Storage	
	Create deferred	

Encoding scheme options for procedures and functions

Parameter CCSID properties, available on the editors/wizards for procedures and functions, let you select an encoding scheme of ASCII, UNICODE, or NONE for character or graphic string parameters.

Advanced Advanced	attributes.	Create Procedu	ıre Wizard - Step 2 of 5		
Properties Advanced	Property Attributes	Advanced Advanced	attributes.		2
Parameters Return Scalar	 Attributes Threadsafe Fenced 	Properties Advanced	Property	Value	
Permissions DDL View	Scratchpad Scratchpad Length Allow Parallel Final Call Parameter Style Inherit Special Regi DBINFO Deterministic External Action Called On Null Input Parameter CCSID	Parameters Permissions DDL View	Result Sets External Action New Save Point Threadsafe Fenced Parameter Style Program Type Inherit Special Registers DBINFO Deterministic Parameter CSID	0 V NO V DB2SQL MAIN V	

Isolation Level Lock Request options on Structured Type methods

For structured type methods, you can now specify whether the INHERIT clause is specified as INHERIT ISOLATION LEVEL WITHOUT LOCK REQUEST or INHERIT ISOLATION LEVEL WITH LOCK REQUEST. This setting is available for methods specified with a Language of SQL.

Schema DBO	•	Structured Type df	fdfsdfsd	•	
4 Properties Attributes	Methods Body	DDL View			Þ
<u>A</u> dd <u>E</u> dit <u>D</u> rop	Specific name	Language SQL	Implemented No		
Create body External name Transform group	evel with lock request		As identifier		

Additional deadlock event types for Event Monitors

The Event Monitor wizard now lets you build event monitors using additional event types:

- DEADLOCKS WITH DETAILS HISTORY and DEADLOCKS WITH DETAILS HISTORY VALUES (IBM DB2 for Linux, Unix, and Windows version 9.0 and higher)
- ACTIVITIES, THRESHOLD VIOLATIONS, and STATISTICS (IBM DB2 for Linux, Unix, and Windows version 9.5)

Create Event Monitor Wi	zard - Step 2 of 4			
Definition Definition of Event mon	tor			
Properties Definition Conditions DDL View	Event types DATABASE DEADLOCKS DEADLOCKS WITH DETAILS DEADLOCKS WITH DETAILS HISTORY DEADLOCKS WITH DETAILS HISTORY VAL STATEMENTS		Database partitions	
	Deadlock Monitoring Ocal (Selected Partition) Olobal (All Database Partitions) Select.org Select.org			

IBM DB2 FOR Z/OS OBJECT MANAGEMENT ENHANCEMENTS

Extended Truncate table support

For this release, the truncate operation has been extended to control DROP STORAGE/REUSE STORAGE, RESTRICT WHEN DELETE TRIGGERS/IGNORE DELETE TRIGGERS, and IMMEDIATE clauses of the TRUNCATE TABLE statement.

Action Options	1 table(es) to be truncated:	
Dependencies Preview	ADB.dfdf	Barta 2↓ C Truncate Table Reuse Storage Restrict When Delete Triggers Immediate
		Reuse Storage Specifies that all storage that is allocated for the table will be emptied, but will continue to be allocated for the table
E	yreview <u>S</u> chedule (<u>B</u> ack	Next > Execute Cancel Help

Long object names

This release introduces support for DB2 Long Object Names, typically allowing identifiers of up to 128 bytes.

Table cloning actions

DBArtisan now supports object actions corresponding to CREATE CLONE and DROP CLONE options for ALTER TABLE statements, functionality introduced in IBM DB2 for z/OS version 9. EXCHANGE DATA statement support is also provided, letting you quickly replace a table with its clone.

TABLE_1 CN TABLE_2 CN TABLE_3 CN	Clone Actions	Create Clone Drop Clone Exchange Data With Clone
Exchange Data With Clone	e	
Preview Preview De Preview Ad Create Clone Preview Ad Create Clone Preview Preview	1 tables to clone	□ I I I I I I I I I I I I I I I I I I I
		Clone Name Clone Name

Universal tablespaces

Universal tablespaces combine the benefits of partitioned table spaces with segmented table spaces. DBArtisan now offers Range-partitioned and Partition-by-growth tablespace types. Other properties let you provide additional CREATE TABLESPACE options required to implement these universal tablespaces.

Create Tablespace Wiza	rd - Step 1 of 3		_ 🗆 🗙
Properties Specify the tablespace	properties.		
Properties	Property	Value	
Permissions	Creation		•
DDL View	Name	MYTABLESPACE	
	Database type	Regular	-
	Database	DB1	-
	Creation type	Partitioned	T
	Tablespace management	Partitioned	
	Management type	Segmented	
	Bufferpool	Range-partitioned universal Partition-by-growth universal	
	Buffer Pool	LUB	
	Partitions and size	-	
	and a second	ſ	
	Creation type Simple, Partitioned, Segmented, Universal ar	nd LOB	
	< <u>B</u> ack <u>N</u> ext>	<u>Einish</u>	Help

Modifying column sizes and default values with a simple ALTER TABLE statement Changing column sizes and default values can now be handled through a simple ALTER when working against DB2 for z/OS version 8 and above. This eliminates the cost of using an extended ALTER.

Catalog table statistics

Calculation and display of certain index and table statistics have been revised to reflect DB2 version 8.x updates to system catalogs. New statistics (and the relevant catalog table column) for this release impacted by this change include:

- Index statistics: Data Blocks/Key (AVGKEYLEN) and DASD storage (SPACEF)
- Table statistics: Average Row Length (AVGROWLEN) DASD storage (SPACEF)

Existing statistics impacted by this change include:

- Index statistics: Cluster Ratio (CLUSTERRATIOF)
- Table statistics: Number of rows (CARDF) and Number of pages (NPAGESF)
- Column statistics: Number of Distinct Values in the Column (COLCARDF)

Compressed indexes, index key randomization, and expression-based indexes This DBArtisan release introduces support for these IBM DB2 for z/OS version 9 features.

Properties	Property	Value
Columns	Attributes	
Storage	Index Type	UNIQUE -
Partition	Clustered	
Comment	Number of Partitions	0
DDL View	Buffer Pool	BP0 -
	Defer	
	Close	
	Сору	
	Define NO	
	Piece Size (KB)	2097152 •
	Compress	
	Index on Expression	
	Padded	

- *Compressed Indexes* Compressed indexes are useful when space is at a premium, insertions are sequential, and deletions are few.
- Index Key Randomization Entries are stored in random tree locations to avoid page contention on insertion. Available for indexes created with the **Padded** property selected, the RANDOM sort setting is available on the **Columns** panel.

Properties					
Columns					
Storage	Column	Datatype	Nulls	Sort	•
	c1	CHAR (10)	Yes	RANDOM	
Partition					
Comment					
DDL View					

• Expression-based Indexes – This feature is activated using the Index on Expression property. The key-expression is provided on the Columns panel/tab.

Properties	
Columns	
Storage	Expression
	"EMP.SALARY"-6907.52
Partition	

ORACLE OBJECT MANAGEMENT ENHANCEMENTS

ONLINE/OFFLINE status of tablespace datafiles

When creating or modifying tablespace datafiles, you can now set the availability of the datafile to either ONLINE or OFFLINE.

		-
Modify Datafile - /	opt/u01/oracle/app/oracle/product/11.1.0/db	\mathbf{X}
Datafile Name:	/opt/u01/oracle/app/oracle/product/11.1.0/db_1/dbs/tbl_03	•
Datafile Size:	25 MB 💌	
Datafile Status:	ONLINE	
Auto Extend		
Disk Space to Alloca	te to the Datafile When More Extents are Required:	
	8 КВ т	
Maximum Disk Space	e Allowed for Allocation to the Datafile:	
	OUnlimited	
	● Other: 1024 MB ■	
	K X Cancel ? Help	

REVAMPED EDITORS AND WIZARDS

This release continues the reworking of object editors and wizards. Aimed at improving workflow and the user interface experience, the new editors and wizards are being reworked for consistency. The following object editors/wizards were upgraded for this release:

- Microsoft SQL Server Backup Devices, Linked Servers, Remote Servers, Roles, User Messages
- DB2 for Linux, Unix, and Windows Event Monitors, Structured Types
- DB2 for z/OS Tablespaces

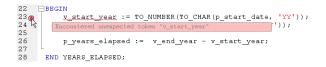
ISQL EDITOR

AUTOMATED ERROR DETECTION AND CODING ASSISTANCE

This release introduces a number of automated, as-you-type ISQL editor features. While the existing debug and execution options provide assistance at the codecompleted or ready-for-testing stage, the new features optimize productivity as you create or edit SQL. The new features minimize typographical errors, let you quickly correct obsolete object name references, and save time and keystrokes.

On-the-fly syntax checking

The ISQL editor now provides real-time, continuous syntax checking. With errors persisting until corrected, this feature lets you quickly find and diagnose coding errors.



Semantic validation

Semantic validation ensures that the names of tables, columns, and views, are properly specified. A semantic error is an indication that a name references an object not found in the database.

1 A SELECT * FROM TE	ST.JNI
CUA (DAU AS7)000	
	EONN1 Line 1 Col 28
Error	× *
Batch line Column Error type Error	r Message
1 15 🕭 Semantic Tabl	e UNI cannot be resolved or may be hidden by a SQL filter

Code Complete

Within SELECT, INSERT, UPDATE, DELETE, CALL, and EXEC statements, the Code Complete feature offers intelligent suggestions at those points in the statement where objects names are specified. A Code Complete suggestion list lets you choose from a list of object names. This both eliminates keystrokes and minimizes errors. Suggestions are offered for tables, columns, views, packages, procedures, functions, and synonyms.

_ ک 🧐		S . S . S . S .	▶ ₩ ② № • ③ ≫ ≦ 巻 🔟 ጲ
1 🕲 2	SELECT	* FROM	I ADMINISTRATOR - (SCHEMA) CLAUDU - (SCHEMA) B023CLAUDIA - (SCHEMA) D023CLAUDIA - (SCHEMA) D020 - (SCHEMA)

QUERY OPTION ENHANCEMENTS

You can now save your Query Options settings for subsequent loading in another session. You can also revert your current settings to the DBArtisan defaults.

Op	ption	Value		<u>0</u> K
	Execution Options			
	Batch Delimiter	3		<u>C</u> ancel
	Row Count	0		
	Max Errors Before Aborting (0	0		<u>R</u> eset
	Check syntax when executing	 Image: A start of the start of		Save
	Run script with batch execution	 Image: A set of the set of the		<u> </u>
	Create explain plan tables if re	 Image: A start of the start of		Load
	Create explain plan tables on t			
	Transactions		_	Help
	Isolation Level	RESET	×,	
			•	

In addition, the frequency for which query options are sent to the server has been optimized for locked ISQL sessions. Once locked, a session will only send query options on the first execution. While the session remains locked, only options you explicitly modify are sent to the server on the next execution.

SQL PREPROCESSOR (#DEFINE/#INCLUDE) IMPROVEMENT

Prior to this release, preprocessing a script made #define and #include substitutions in the same ISQL editor window, losing the current state of your opened or edited script. For this release, you now have the option of opening a preprocessed script in a new ISQL editor session, unexecuted.

DATA EDITOR

IMPROVED RECORD CREATION FOR TABLES WITH ALL-DEFAULT COLUMN VALUES

For tables with all columns defined as having a default value, new rows can be added using only the Insert New Record and Save Current Row buttons. This eases record creation as no values need to be typed in column cells.

DEFAULT VALUE HANDLING

For tables with all columns defined as having default values, there is no longer a requirement to provide a value in at least one column cell when adding records. You can now add multiple records by repeatedly clicking the Insert New Record and Save Current Row buttons.

DATASOURCE EXPLORER UPDATES

NEW TREE VIEW WITH EXTENDED FUNCTIONALITY

Tree display and related functionality of the Datasource Explorer have been reworked. Connection has been simplified, tree organization better reflects ownership/containment, and more right-click object actions are available directly from the tree.

	Ŷ	Table Owner	Table Name	# Rows	Filegroup	Created
🕀 🫅 DB2 Servers	~					
🖻 🧰 MS SQL Servers		💷 dbo	foo	0	PRIMARY	2/27/2008 2:29:54 PM
TORLABSQL05_1 (SQL Server 9.0.1399.0)						
TORLABSQL05_2 (SQL Server 09.00.3042)						
🗄 🏆 Filters (2)	=					
🕀 🖣 Server	=					
🕀 👼 Storage						
🕀 🥜 Security						
🖻 👘 Databases (100)						
🖃 🔲 123рас						
🖻 🛃 Schemas (8)						
🖃 🎜 dbo (13)						
Check Constraints						
- Marine Contraction of the second se						
fractions	~					

DATASOURCE FILTERING

Existing filtering capabilities have been revised or enhanced for this release. In addition, new, more powerful filtering capabilities are now available.

Simple, name-based filtering

The Filter box at the top of the Datasource Explorer lets you hide datasources based on naming. When you type one or more characters, the tree is updated to show only those nodes of connected datasources whose name contains the characters you typed.



Complex, user-defined object name filtering

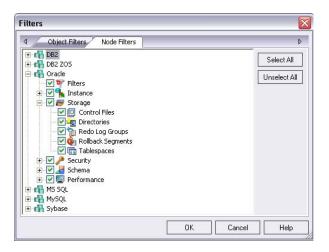
Filters that hide system objects or that display only objects owned by the current DBArtisan user were available in previous releases. Now you can create your own custom filter definitions. Each named filter consists of one or more ANDed conditions, based on schema or object names. You can also specify the object types to which your object filter applies.

y Objett	Filter	s Node	Filters			
						New
÷		iore System ow Only My				Delete
+ 🛃 Orac		Filter				Rename
🗄 🚮 MS S	QL	iore System				Clone
🗄 🚮 Syba	1222	Databa	ise Elements		0) By Filter
Propert		Operator		Value	I.	
Name	-	Like	• TOR			New
Schema	•	Equals	K-			Delete
Sunema		Equals	*W [Back State

Filters can be defined at the datasource level or at the DBMS level and are enabled and disabled at the datasource level. When a filter is enabled, the tree display for that datasource will include only those objects whose name, schema, and object type satisfy the filter conditions.

Node filtering

Node filtering, defined at the DBMS platform level, lets you hide and show objects based on object type.



Filters node

Each datasource now features a **Filters** node. In addition to any custom object filters you create, this node provides access to two default filters: **Ignore System Objects** and **Show Only My Objects**.



The defaults replace functionality previously available in the Options editor. They can be enabled and disabled at the datasource level but cannot be edited or deleted. Custom filters can also be enabled and disabled but the **Filters** node also provides access to creation and maintenance features.

ADDITIONAL OR MISCELLANEOUS FEATURES

In response to customer requests, a number of new or enhanced features are now available. General enhancements for this release include:

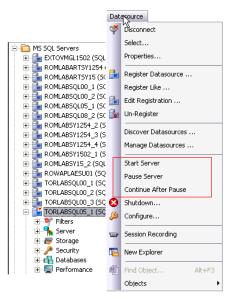
• The ability to export and import datasource definitions. This can save time in organizations with large numbers of datasources and multiple users. For example, you can have one user walk through the process of registering each datasource and then export those definitions. Other users can then import the resulting datasource definition files.

IBM DB2 for Z/OS improvements include the following:

• Removal of reliance on proprietary stored procedures - For the past several releases, DBArtisan relied on a set of Embarcadero-provided stored procedures in supporting certain DB2 z/OS functionality. This functionality is now provided through native IBM DB2 for z/OS stored procedures. In addition to simplifying installation and setup, this better positions DBArtisan for further DB2 for z/OS enhancements.

Microsoft SQL Server improvements include the following:

• DBArtisan now offers **Datasource** menu commands that let you start a server, pause a server, and continue after pausing.



Sybase improvements include the following:

• Server shutdown Wait Time option – This feature lets you enable a grace period, an upper limit on how long to wait for normal operations to complete before forcing a shutdown.

Shutdown Server Romlabsycluster 🛛 💈
Normal A normal shutdown tries to shut down the server in an orderly fashion by disabiling logins, waiting for currently executing Transact-SQL statements or stored procedures to finish, and performing a checkpoint in every database
□ Wait Time 00:00:00 ♀
<u>○</u> Immediate
Shuts down the server immediately, without performing checkpoints in every database. The server exits after attempting to terminate all user processes and roll back any active transactions.
Preview Schedule Execute X Cancel ? Help
DESTRUCTIVE ACTION - PLEASE CONFIRM

ADDITIONAL RESOURCES

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