

The ICC Duckworth-Lewis-Stern calculator

DLS Edition 2025

(DLS6.0)

Installation and operating instructions

Queries about program operation should be sent to: sstern@bond.edu.au

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Installation

The software is contained in a single file, named *DLS60.jar*, which should be copied onto any convenient location of your computer. As previously, you should create a desktop icon from which you can run the program. Right click on the name of the file and choose ‘send to’, then ‘desktop (create shortcut)’. You may prefer to edit the title to ‘*DLS60*’ and change the icon (right click on the icon and select ‘properties’).

The new version incorporates changes to the formula parameters; however, the program is operated just as its predecessors were, so those familiar with the workings of the previous software need read no further. When you change over to this new software, it is recommended you delete previous versions of DLS still on your computer.

The program is designed to run on PC computers with a Windows 10 system. [NOTE: The program should still run with any system that supports an appropriate Java environment. However, for some installations, particularly on tablets, there may be a need to manually adjust screen resolution to make the DLS input screen readable.]

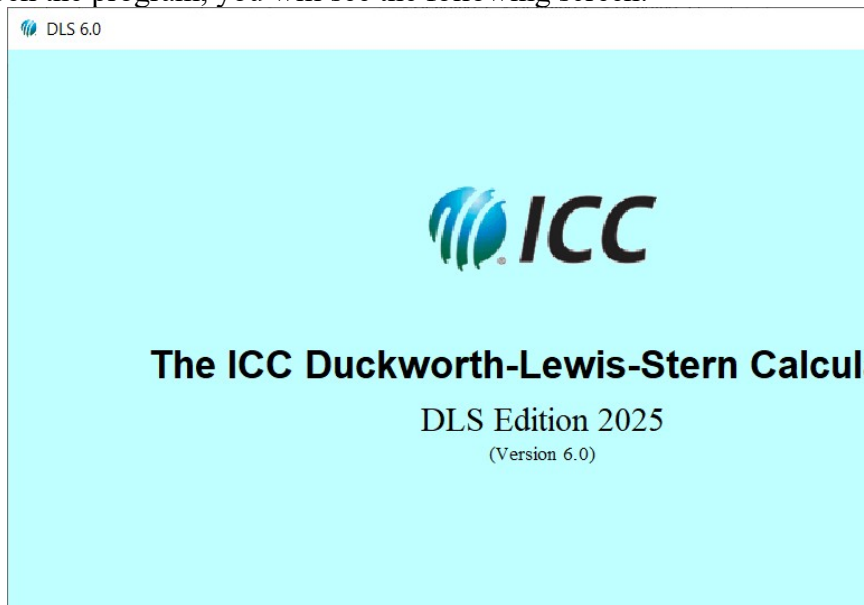
To run the DLS program, the Java® runtime environment must be installed. If you have used the DLS program in the past, then you have an appropriate version of Java installed and you should be able to continue running the DLS software as before. However, we note that Java has been purchased by Oracle Software and is no longer free. For this reason, if you need to install (or update) Java on your computer, we recommend the Microsoft Build of OpenJDK version 21, which is now the free version of the Java environment. For instructions, see:

<https://learn.microsoft.com/en-us/java/openjdk/install>

[NOTE: On most systems, the account used for installation must have appropriate privileges (e.g., an administrator account), but once Java installation is done any user will be able to use the program without requiring such privileges.]

Starting the program

When you open the program, you will see the following screen:



The first step is then to select the ‘match type’ applicable by clicking the appropriate grey button. The match types are defined by the number of overs per innings and the minimum number of overs which must be available to each side for a valid match. Select ‘ODI’ if the competition has 50-over innings with a minimum of 20 overs to be available to each. Select Twenty20 for standard Twenty20 International conditions (20 overs/innings, min. 5 per side).

If the match is neither of these, select ‘other match types’. Select the appropriate conditions from the drop down menu; if none is applicable, select ‘Custom’ and enter the required figures as prompted.

Example: the match is from a domestic competition which has 45 overs/innings with a minimum of 20 overs/side for a valid match. Select ‘other match types’; then click the down arrow in the box which appears and select the option ‘45 overs/innings; min. 20 overs/side’; click ‘OK’.

Example: the match is from a competition with 30 overs/innings and a minimum of 8 overs available to each side for a valid match. Select ‘other match types’; then click the down arrow in the box which appears and select the option ‘Custom’. Enter **30** (overs/innings), click ‘OK’, then **8** (min. overs/side) and click ‘OK’ again.

You then proceed to the calculation screen. The heading shows the match type (overs/innings and min. overs/side). For example, here is the calculation screen for an ODI:

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings					Team 2's innings				
overs/innings		50			overs at start of innings		50		
at start of match					TARGET:		(to win)		
Team 1's final score									
overs	balls bowled	runs scored	wickets down	overs lost/side	overs	balls bowled	runs scored	wickets down	overs lost
1					1				
2					2				
3					3				
4					4				
5					5				
add further stoppage row									
total overs available: 50					total overs available: 50				
Penalty runs awarded to Team 1 while Team 2 are batting:									

General notes

- Throughout, the team batting first are called ‘Team 1’; the team batting second are called ‘Team 2’.
- Overs are expressed in ‘cricket notation’, and this should be used when typing in a number of overs which is not a whole number. For instance, ‘4.5 overs’ means four overs and five balls. Only six-ball overs are recognised.
- You may navigate through the data entry boxes using either the mouse, the keyboard arrow keys or the Tab key (shift + Tab for moving backwards). The Tab key will move the cursor within an individual innings until it reaches the end of the available entry boxes. The arrow keys will move the cursor across innings directly.

Target calculation in event of stoppage(s)

The number of overs/innings as per the match type appears in the top left box. If the start of play is delayed and the match begins with a reduced number of overs/innings, enter this number in the box to replace the default value.

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings					Team 2's innings				
overs/innings at start of match:	50				overs at start of innings:	50			
Team 1's final score:					TARGET:	(to win)			
overs	balls bowled	runs scored	wickets down	overs lost/side	overs	balls bowled	runs scored	wickets down	overs lost
1					1				
2					2				
3					3				
4					4				
5					5				

add further stoppage row

total overs available: 50

total overs available: 50

Penalty runs awarded to Team 1 while Team 2 are batting:

Reduce this value if the match is delayed prior to commencing

Team 1's innings

If there are no stoppages in Team 1's innings, enter Team 1's final score where indicated. The Target is displayed and you may then move to Team 2's innings.

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings					Team 2's innings				
overs/innings at start of match:	50				overs at start of innings:	50			
Team 1's final score:	234				TARGET:	235 (to win)			
overs	balls bowled	runs scored	wickets down	overs lost/side	overs	balls bowled	runs scored	wickets down	overs lost
1					1				
2					2				
3					3				
4					4				
5					5				

add further stoppage row

total overs available: 50

total overs available: 50

Penalty runs awarded to Team 1 while Team 2 are batting:

Enter Team 1's final score here

Team 2's target is displayed here

If there are stoppages in Team 1's innings after play has commenced and overs are lost, for each stoppage enter the match details at the stoppage and the number of overs lost per side in that stoppage.

Example: a 50 overs/innings game is interrupted by rain after 10.3 overs have been bowled with the score at 45/1, and the match is reduced to 48 overs/innings; this is a loss of 2 overs to each side, and you should enter **10.3** (overs bowled), **45** (runs scored), **1** (wicket down), **2** (overs lost per side).

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match:

Team 1's final score:

Team 2's innings

overs at start of innings:

TARGET: (to win)

Note that Team 2's overs are updated automatically

	overs	balls bowled	runs scored	wickets down	overs lost/side
1	10.3	45	1	2	
2					
3					
4					
5					

	overs	balls bowled	runs scored	wickets down	overs lost
1					
2					
3					
4					
5					

add further stoppage row

total overs available: total overs available:

Penalty runs awarded to Team 1 while Team 2 are batting:

Enter Team 1 stoppage info

Example (cont'd): The innings is then further interrupted by rain after 16 overs have been bowled with the score at 67/5, and the match is now reduced to 44 overs/innings; this constitutes a further loss of 4 overs to each side and you should enter the details in the second row of the stoppage information boxes, these being **16** (overs bowled), **67** (runs scored), **5** (wickets down), **4** (overs lost per side).

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match:

Team 1's final score:

Team 2's innings

overs at start of innings:

TARGET: (to win)

	overs	balls bowled	runs scored	wickets down	overs lost/side
1	10.3	45	1	2	
2	16	67	5	4	
3					
4					
5					

	overs	balls bowled	runs scored	wickets down	overs lost
1					
2					
3					
4					
5					

add further stoppage row

total overs available: total overs available:

Penalty runs awarded to Team 1 while Team 2 are batting:

If innings abandoned, enter 'a' here

If the innings has to be prematurely terminated, enter the match details at the stoppage (overs bowled, runs scored, wickets down) and then type **a** (for 'abandoned') in the 'overs lost' box. The runs scored will be replicated in the 'Team 1's final score' box, and you will move on to Team 2's innings with the revised Target displayed.

Further, once a completed stoppage row has been entered (i.e., including the number of overs lost) but prior to re-commencement of play, a **?** may be typed into the Team 1 final score field and a table of projected scores along with associated DLS target adjustments will be created to allow users to anticipate the likely size of the DLS target adjustment once the first innings is complete.

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: ?

	overs.balls bowled	runs scored	wickets down	overs lost/side
1	10.3	45	1	2
2	16	67	5	4
3				
4				
5				

add further stoppage row

total overs available: 44

Team 2's innings

overs at start of innings: 44

TARGET: (to win)

	overs.balls bowled	runs scored	wickets down	overs lost/side
1				
2				
3				
4				
5				

add further stoppage row

total overs available: 44

Penalty runs awarded to Team 1 while Team 2 are batting:

Enter '?' here to see table of possible Targets for a range of projected final first innings totals.

DLS 6.0: Table of possible Ta... —

print table save

further runs scored	final first innings score	DLS Target	D adjust
53	120	118	-3
63	130	128	-3
73	140	137	-4

Finally, if the innings is not prematurely terminated and it is completed (either all overs bowled or ten wickets lost) do **not** enter the match situation at the end of the innings as this does not constitute a stoppage with a loss of overs. Instead, simply enter Team 1's final score in the appropriately labeled box, whereupon the revised Target will be displayed and you may then move to Team 2's innings.

Example (cont'd): Team 1 now completes its remaining 28 overs without further interruption and ends their innings on 148/8. Enter **148** in the 'Team 1's final score' box and Team 2's victory target will be displayed in the red box

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: 148

	overs.balls bowled	runs scored	wickets down	overs lost/side
1	10.3	45	1	2
2	16	67	5	4
3				
4				
5				

add further stoppage row

total overs available: 44

Team 2's innings

overs at start of innings: 44

TARGET: 145 (to win)

	overs.balls bowled	runs scored	wickets down	overs lost/side
1				
2				
3				
4				
5				

add further stoppage row

total overs available: 44

Penalty runs awarded to Team 1 while Team 2 are batting:

Team 2's victory target (i.e., total runs needed for victory, one less than this would constitute a tied match).

Team 2's innings

The 'overs at start of innings' box for Team 2's innings will automatically update to contain the number of full overs which were available to Team 1.

If the start of Team 2's innings is delayed and it has to be (further) shortened, enter ? in the box labeled 'overs at start of Team 2's innings' and a table will appear as a pop-up window giving Team 2's Target for all possible number of overs they are allocated (see section headed 'Tables and print-outs' below). When it is known how many overs Team 2 are allocated, enter this number in the box and the revised Target will be displayed.

Example (cont'd): Team 1 made 148/8 in their available 44 overs. Rain then further interrupts play during the interval.

The screenshot shows the DLS 6.0 interface for a match between Team 1 and Team 2. Team 1's innings is complete with 50 overs at start of match, a final score of 148, and 44 total overs available. Team 2's innings is in progress with 0 overs at start of match and a target of 133. A pop-up window titled 'Table of possible Targets' is displayed, showing a table with columns for 'overs lost in current stoppage', 'total overs in innings', and 'overs remaining'. The table lists values from 0 to 19 for overs lost, with corresponding total overs and remaining overs. A green callout points to the 'overs remaining' column, stating: 'Possible Targets Table pop-up window; e.g., if Team 2 are given 37 overs, the target will be 133'. Another green callout points to the 'overs at start of match' box for Team 2, stating: 'If play interrupted in the interval, use '?' here to view possible targets'. The interface also includes a 'Penalty runs awarded to Team 1 while Team 2 are batting' box.

overs lost in current stoppage	total overs in innings	overs remaining
0	44	44
1	43	43
2	42	42
3	41	41
4	40	40
5	39	39
6	38	38
7	37	37
8	36	36
9	35	35
10	34	34
11	33	33
12	32	32
13	31	31
14	30	30
15	29	29
16	28	28
17	27	27
18	26	26
19	25	25

If play is suspended during Team 2's innings, enter the match details at the stoppage in the boxes as indicated (overs bowled, runs scored, wickets down). Type ? in the 'overs lost' column to give the full schedule of revised Targets for any number of overs lost (see section headed 'Tables and print-outs' below).

When it is known how many overs are lost, enter this number in the 'overs lost' column and the revised Target, together with Team 2's revised further requirement, will be displayed.

If play cannot be restarted and the match has to be prematurely terminated, enter a (for an abandonment) as indicated and the match result will be displayed. If the details entered are such that the match is over (10 wickets down, all available overs bowled or Target achieved), the result of the match will be displayed.

Note that target scores will be calculated and displayed if no entry is made in the 'runs scored' box. This is because the runs scored at a stoppage do not enter into the calculation. However, the runs scored are needed to give statements of the state of the match (see below) and to display the result at the end of the match.

Example (cont'd): Team 2 are given 37 overs. They bat for 21 overs, reaching 93/5, when rain again intervenes. You should enter 37 in Team's 'overs at start of innings' and the stoppage information into the first Team 2 stoppage row: 21 (overs bowled), 93 (runs scored), 5 (wickets down).

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: 148

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	10.3	45	1	2	
2	16	67	5	4	
3					
4					
5					

add further stoppage row

total overs available: 44

Team 2's innings

overs at start of innings: 37

TARGET: 133 (to win)

Team 2 are ahead (Par Score = 81)

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	21	93	5		
2					
3					
4					
5					

add further stoppage row

total overs available: 37

Penalty runs awarded to Team 1 while Team 2 are batting:

Example (cont'd): Team 2 lose 10 overs. Enter **10** in the overs lost field to display the revised target.

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: 148

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	10.3	45	1	2	
2	16	67	5	4	
3					
4					
5					

add further stoppage row

total overs available: 44

Team 2's innings

overs at start of innings: 37

TARGET: 109 (to win)

Revised Target: 109 (16 further runs in 6 overs)

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	21	93	5	10	
2					
3					
4					
5					

add further stoppage row

total overs available: 37

Penalty runs awarded to Team 1 while Team 2 are batting:

Example (cont'd): Team 2 bat another 4 overs, reaching 102/7 in the 25 available overs, when their innings has to be abandoned.

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: 148

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	10.3	45	1	2	
2	16	67	5	4	
3					
4					
5					

add further stoppage row

total overs available: 44

Team 2's innings

overs at start of innings: 37

TARGET: (to win)

TEAM 2 win by 4 runs (Par score at end)

	overs	balls	runs	wickets	overs
	bowled	scored	down	lost	side
1	21	93	5	10	
2	25	102	7	a	
3					
4					
5					

add further stoppage row

total overs available: 25

Penalty runs awarded to Team 1 while Team 2 are batting:

Par Score tables

When Team 1's innings has been completed and Team 2's innings is about to start, or after a stoppage in Team 2's innings with a revised Target, the DLS operating protocol requires that Par Score schedules are produced for distribution. These are obtained by clicking on the buttons in the bottom left-hand corner (see section headed 'Tables and print-outs' below).

DLS 6.0: Table of over-by-over Par Scores

print table

overs bowled	overs remaining	0	1	2	3	4	5	6	7
0	50	0	18	40	66	96	129	160	187
1	49	2	20	41	67	97	129	160	187
2	48	4	21	42	68	97	129	160	187
3	47	7	23	44	68	98	129	160	187
4	46	9	25	45	69	98	129	160	187
5	45	11	27	47	70	99	130	160	187
6	44	14	29	48	71	99	130	160	187
7	43	16	31	50	71	100	130	160	187
8	42	19	33	51	74	101	130	160	187
9	41	21	36	53	75	101	131	160	187
10	40	24	38	55	76	102	131	160	187
11	39	27	40	57	78	103	131	161	187
12	38	30	43	59	79	104	132	161	187
13	37	33	45	61	80	104	132	161	187
14	36	36	48	63	82	105	132	161	187
15	35	39	51	65	84	106	133	161	187
16	34	42	53	67	85	107	133	161	187
17	33	46	56	70	87	109	134	161	187
18	32	49	59	72	89	110	135	161	187
19	31	53	62	75	91	111	135	162	188
20	30	56	66	78	93	112	136	162	188
21	29	60	69	80	95	114	137	162	188
22	28	64	72	83	97	115	138	162	188
23	27	68	76	86	100	117	138	163	188
24	26	72	80	89	102	119	139	163	188
25	25	76	83	93	105	121	140	164	188
26	24	81	87	96	108	123	142	164	188
27	23	85	91	100	110	125	143	165	188
28	22	90	96	103	113	127	144	165	188
29	21	95	100	107	117	129	146	166	188
30	20	99	104	111	120	132	147	167	188
31	19	104	109	115	123	135	149	168	189
32	18	110	114	120	127	137	151	168	189
33	17	115	119	124	131	140	153	170	189
34	16	121	124	129	136	144	155	171	190
35	15	126	129	133	139	147	158	172	190
36	14	132	135	138	144	151	161	174	191
37	13	138	140	144	148	155	163	176	191
38	12	144	146	149	153	159	167	178	192
39	11	151	152	155	158	163	170	180	193

DLS 6.0 - match type: ODI regulations (50 overs/innings; min. 20 overs/side)

Team 1's innings

overs/innings at start of match: 50

Team 1's final score: 234

Team 2's innings

overs at start of innings: 50

TARGET: 235 (to win)

overs	balls bowled	runs scored	wickets down	overs lost/side
1				
2				
3				
4				
5				

Use these buttons to get par score tables

total overs available: 50

total overs available: 50

Penalty runs awarded to Team 1 while Team 2 are batting:

The Par Score tables disappear whenever new or modified information is added, but you can produce new tables at any time that the appropriate button is active. The Par Score tables list only those values still relevant to the current match.

Penalty runs

The laws of cricket, as revised in 2000, allow for penalty runs to be incurred by either side in either innings. The only situation where the DLS calculation is affected is that in which Team 2 incur penalty runs while batting. In this situation, the penalty runs (5 per incident) are added to Team 1's score but they are not consolidated for DLS purposes. The DLS calculation continues to be made on the basis of Team 1's original score but all Targets and Par Scores are increased by 5 runs per incident.

If Team 2 incur a penalty while batting, the penalty runs should be entered in the box provided (entered values in this box will appear in pink) and the Target and all Par Scores will be immediately updated.

Tables and print-outs

Three tables are available as described earlier. These are:

- Possible Team 2 Targets
- Par Score schedule (over-by-over)
- Par Score schedule (ball-by-ball)

Each table is equipped with both a 'print' button and a 'save' button.

When printed, the tables will be automatically scaled so that a 50-over table will fit within the printer default boundaries. However, depending on the default options of the printer used, these scaled print-outs may be smaller than desired. If so, you will need to modify the default page size and margins directly from your computer system.

By default, saved tables are output in HTML format. They can be viewed using any program which can render HTML code (e.g., Internet Explorer® or Microsoft Word®). When saving an output table, the save dialog will have the default filename included automatically for convenience. However, you will be warned if you are about to overwrite an existing output file, and if you do not wish to overwrite the file select 'No' and you will be returned to the save dialog where you can modify the default filename to one of your own choosing. Alternatively, files may be saved as text files which may be read and edited using, for example, Notepad®.

Underneath each table is a 'TableID' reference which summarises all the information which has been input at the time the table was produced. The time and date at which the table was produced is also shown.

Match report

When a match has been completed, and the final score details for Team 2's innings have been entered, an option is available for producing a DLS report. It is recommended that this report be produced as it may be used as a substitute for the DLS report form in Appendix I of the DLS operating protocol. Click on the button at the bottom right of the screen and enter the information requested: viz

- name of competition (e.g., ICC Champions Trophy)
- identity of teams (these may be abbreviated if required)
- match venue (include town or city)
- date of match
- which team batted first
- contact details (so that user may be contacted in the event of any queries)

The user may also enter any other information that is felt relevant; for instance, the cause of stoppages if other than rain or bad light.

The information entered will be remembered until you select 'reset input fields' or 'change match type' or close the program, thus facilitating production of the report if you have made an input error and corrected it.

Whenever possible, the match report should be emailed to Steven Stern for his records. This can easily be accomplished using the direct facility provided via the 'Email report' button at the bottom of the report window. It should also be sent by copy to the host country's board and/or to ICC as required. For the direct email facility to work properly, an internet connection must be established and the computer system on which DLS3 is being run must have a default email client set-up. The vast majority of computers will have a default email client appropriately configured; however, if your system is not configured to support the direct email facility, you will be advised either by the button label indicating 'Email option unavailable' or by a warning message appearing when you press the 'Email report' button. In this case, you will need to save the report to a file and then email this saved file manually. In most circumstances where the direct email facility is unavailable, your local system

administrator should be able to rectify the situation, should you so desire, by properly configuring your default email client.

Further operational notes

- Stoppages must be listed in order of occurrence so that the ‘overs bowled’ and ‘wickets down’ columns are in ascending order. If this is not the case, an error message will appear underneath the relevant innings information and Targets will not be displayed.
- If any unacceptable figure is entered (e.g., too many wickets down, too many overs lost), an error message will be displayed and no Targets or Par Scores will be calculated until a valid entry is made.
- Input data can be overwritten at any time and the target will automatically be updated. To delete data from adjacent boxes simultaneously, use the mouse to highlight the relevant boxes and use either the Delete or Backspace key.
- While entering stoppage information during Team 2's innings, the value in the red Target box turns grey, allowing the operator to continue to see the old target, until all stoppage information is entered and a new revised target is displayed in red.
- The ‘total overs available’ boxes (coloured green) are automatically calculated by the program and are not for user input.
- If more than five stoppages occur in either innings, clicking the ‘add further stoppage row’ button will add an additional entry row.
- The ‘reset input fields’ button will clear all input cells, return the number of stoppage rows to the default of five and reset Team 1’s ‘overs/innings at start of match’ and Team 2’s ‘overs at start of innings’ to their default values based on the type of match chosen.
- The ‘change match type’ button allows you to modify the match type. You will be warned that this change will result in the loss of any information already entered.