

Online Matchmaking

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All of the multiplayer items in Dark Souls will pair players within a specific range of levels, though the ranges are different between the original and remastered versions of Dark Souls. There are also varying requirements for successful use of each item.

Level Range Formulas in Dark Souls Remastered

White Sign Soapstone, Eye of Death, Dragon Eye, & Red Sign Soapstone

These four items use the standard co-op range. Players can be paired with others who are relatively near their level, using what is commonly referred to as the "10 + 10%" calculation. The range is calculated from the host's perspective.

$x \pm (10 + 0.1x)$

- Level 50 can summon: 35 - 65
- Level 100 can summon: 80 - 120

Red Eye Orb, Cracked Red Eye Orb, & Blue Eye Orb

These items have a lopsided invasion range, allowing an invader to invade higher than they can lower. The range is calculated from the invader's perspective.

$x - 0.1x$ (lower level limit)

$x + (20 + 0.1x)$ (upper level limit)

- Level 50 can invade: 45 - 75
- Level 100 can invade: 90 - 130

Cat Covenant Ring & Darkmoon Blade Covenant Ring

These items have a lopsided invasion range. Similar to the other invasion items, but with a wider range and they are instead calculated from the host's perspective.

x - (20 + 0.2x) (lower level limit)

x + 0.1x (upper level limit)

- Level 50 can be invaded by: 20 - 55
- Level 100 can be invaded by: 60 - 110

Weapon Level Matchmaking in Dark Souls Remastered

Not present in the original version of Dark Souls, a weapon level matchmaking system has been introduced to prevent players with drastically-different levels of gear from pairing.

Both the Soul Level (SL) ranges and Weapon Level (WL) ranges have to match for two players to connect.

Weapon Level	Matches With Weapon Levels	Regular Weapons	Raw Weapons	Fire/ Divine/ Magic Weapons	Unique Weapons	Chaos/ Lightning/ Occult/ Crystal/ Enchanted Weapons	Unique Shields
0	0-5	unupgraded	-	-	-	-	unupgraded
1	0-6	+1	-	-	-	-	-
2	0-7	+2	-	-	-	-	-
3	0-8	+3	-	-	-	-	+1
4	0-10	+4	-	-	-	-	-
5	0-11	+5	unupgraded	unupgraded	unupgraded	-	-
6	1-12	+6	+1	+1	-	-	+2
7	2-13	+7	+2	+2	+1	-	-
8	3-14	+8	+3	+3	-	-	-
9	4-15	+9	+4	+4	+2	-	+3

10	4-15	+10	+5	+5	-	unupgraded	-
11	5-15	+11	-	+6	+3	+1	-
12	6-15	+12	-	+7	-	+2	+4
13	7-15	+13	-	+8	+4	+3	-
14	8-15	+14	-	+9	-	+4	-
15	9-15	+15	-	+10	+5	+5	+5

+ Show complete weapon list - Hide weapon list

Regular Weapons	Unique Weapons	Unique Shields	Fixed at level 0	Fixed at level 5
Balder Side Sword	Abyss Greatsword	Black Knight Shield	Crystal Greatsword	Dark Hand
Bandit's Knife	Astora's Straight Sword	Cleansing Greatshield	Crystal Straight Sword	Manus Catalyst
Barbed Straight Sword	Black Knight Greataxe	Crest Shield	Crystal Shield	Tin Darkmoon Catalyst
Bastard Sword	Black Knight Greatsword	Dragon Crest Shield	Skull Lantern	
Battle Axe	Black Knight Halberd	Greatshield of Artorias	Beatrice's Catalyst	
Blacksmith Hammer	Black Knight Sword	Havel's Greatshield	Canvas Talisman	
Broadsword	Blacksmith Giant Hammer	Silver Knight Shield	Darkmoon Talisman	
Broken Straight Sword	Channeler's Trident	Stone Greatshield	Demon's Catalyst	
Butcher Knife	Chaos Blade		Ivory Talisman	
Caestus	Crescent Axe		Izalith Catalyst	
Claw	Dark Silver Tracer		Logan's Catalyst	
Claymore	Demon's Spear		Oolacile Catalyst	
Club	Dragon Bone Fist		Oolacile Ivory Catalyst	
Dagger	Dragon Greatsword		Sorcerer's Catalyst	
Darksword	Dragon King Greataxe		Sunlight Talisman	
Demon Great Machete	Dragon Tooth		Talisman	
Demon's Great Hammer	Dragonslayer Spear		Thorolund Talisman	

Demon's Greataxe	Drake Sword		Tin Banishment Catalyst	
Estoc	Ghost Blade		Tin Crystallization Catalyst	
Falchion	Giant's Halberd		Velka's Talisman	
Flamberge	Gold Tracer			
Four-pronged Plow	Golem Axe			
Gargoyle Tail Axe	Grant			
Gargoyle's Halberd	Gravelord Sword			
Great Club	Great Lord Greatsword			
Great Scythe	Greatsword of Artorias			
Greataxe	Greatsword of Artorias (Cursed)			
Greatsword	Hammer of Vamos			
Guardian Tail	Jagged Ghost Blade			
Halberd	Lifhunt Scythe			
Hand Axe	Moonlight Butterfly Horn			
Iaito	Moonlight Greatsword			
Large Club	Obsidian Greatsword			
Longsword	Priscilla's Dagger			
Lucerne	Quelaag's Furysword			
Mace	Silver Knight Spear			
Mail Breaker	Silver Knight Straight Sword			
Man-serpent Greatsword	Smough's Hammer			
Morning Star	Stone Greataxe			
Murakumo	Stone Greatsword			
Notched Whip	Titanite Catch Pole			
Painting Guardian Sword	Velka's Rapier			
Parrying Dagger	Crystal Ring Shield			

Partizan	Darkmoon Bow			
Pickaxe	Dragonslayer Greatbow			
Pike	Gough's Greatbow			
Rapier				
Reinforced Club				
Ricard's Rapier				
Scimitar				
Scythe				
Server				
Shortsword				
Shotel				
Spear				
Straight Sword Hilt				
Sunlight Straight Sword				
Uchigatana				
Warpick				
Washing Pole				
Whip				
Winged Spear				
Zweihander				
Balder Shield				
Black Iron Greatshield				
Bloodshield				
Bonewheel Shield				
Buckler				
Caduceus Kite Shield				
Caduceus Round Shield				
Cracked Round Shield				
Eagle Shield				

East-West Shield				
Effigy Shield				
Gargoyle's Shield				
Giant Shield				
Grass Crest Shield				
Heater Shield				
Hollow Soldier Shield				
Iron Round Shield				
Knight Shield				
Large Leather Shield				
Leather Shield				
Pierce Shield				
Plank Shield				
Red and White Round Shield				
Sanctus				
Small Leather Shield				
Spider Shield				
Spiked Shield				
Sunlight Shield				
Target Shield				
Tower Kite Shield				
Tower Shield				
Warrior's Round Shield				
Wooden Shield				
Avelyn				
Black Bow of Pharis				
Composite Bow				
Heavy Crossbow				
Light Crossbow				
Longbow				
Short Bow				

Sniper Crossbow				
Pyromancy Flame				

Notes on Weapon Level Matchmaking

- It is not possible to decrease your weapon level. As soon as you've acquired a new-highest weapon upgrade, that is permanently flagged for your character. Dropping weapons or moving them into the Bottomless Box will not change it.
- The regular Pyromancy Flame is treated as a "regular" weapon. The Ascended Pyromancy Flame starts at weapon level 15, and remains there with further upgrades.
- Armor upgrades, rings, spells, and other items will not increase or affect weapon level.
- It is possible to pair with another player outside of your weapon level range if the connection occurs very-soon after a player has upgraded their weapon.
- As rare weapons are counted as +5 and already infused weapons count as +10, picking up an ingame rare weapon from a drop, chest, or merchant will automatically raise your weapon level to +5, and picking up one of the infused weapons dropped by a mimic will increase your weapon level to +10.
- The official guide has a description of the weapon level matchmaking which can be seen [here](#). This has been tested to be incorrect and the above chart is correct. Reddit made a spreadsheet [here](#), all of which is reflected above.
- The Crystal Straight Sword, Crystal Greatsword, Crystal Shield which are either sold by Domhnall of Zena or dropped by the skeletons in The Duke's Archives are fixed at WL0. Weapons that are ascended to Crystal are WL10 and look like normal weapons. This includes the Crystal Halberd inside the Mimic near the start of Anor Londo and the Crystal Knight Shield inside the mimic in The Duke's Archives.

Password Matchmaking in Dark Souls Remastered

In the network settings, players may set a password to make pairing with a friend easier.

- Coordinating a password will bypass both Soul Level and Weapon Level ranges for the White Sign Soapstone and Red Sign Soapstone, allowing an infinite range for both items.
 - Setting a password will mask other white and red soul signs from view, and also prevent your signs from being sent to random players.
 - 'Overleveled' summons (players outside of the normal ranges) will receive a debuff when paired with a lower-level host.
 - Dragon Signs, Gravelord Signs, and other forms of multiplayer are not affected by the password system. This means they will neither bypass level ranges, nor be masked from view.
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Level Range Formulas in Original Dark Souls

The level range formulas are always calculated from the perspective of the player using the multiplayer item, not the host. For the given formulae below, x = the level of the player using the corresponding item.

White Sign Soapstone, Eye of Death & Dragon Eye

These three items use the standard co-op range. Players can be paired with others who are relatively near their level, using what is commonly referred to as the "10 + 10%" calculation.

$x \pm (10 + 0.1x)$

- Level 50 can be matched with: 35 - 65
- Level 100 can be matched with: 80 - 120

Red Sign Soapstone & Cat Covenant Ring

These two items use the same calculation as the above items to find out the lowest levels they can be paired with, but there is no upper-level restriction. This allows users of these items to be paired with anyone that is a higher level, all the way up to the max level.

$x - (10 + 0.1x)$, or any level higher

- Level 50 can be matched with: 35 - 713
- Level 100 can be matched with: 80 - 713

Red Eye Orb & Cracked Red Eye Orb

Similar to the Red Sign Soapstone, these items can pair an invader with a host slightly below their level, or all the way up to max level. The difference is that the red eye orbs use a different formula for the lower-level limit, invading only 10% below the invader's level. This results in a smaller level range.

$x - 0.1x$, or any level higher

- Level 50 can be matched with: 45 - 713
- Level 100 can be matched with: 90 - 713

Blue Eye Orb & Darkmoon Blade Covenant Ring

These items use the co-op range to calculate the highest level that can be invaded, but a unique formula allows Darkmoon invaders to go considerably far downwards.

x - (50 + 0.2x) (lower-level limit)
x + (10 + 0.1x) (upper-level limit)

- Level 100 can be matched with: 30 - 120
- Level 200 can be matched with: 110 - 230

Connection Requirements & Tips

Multiplay er Item	White Sign Soapston e	Red Sign Soapston e	Red Eye Orb	Blue Eye Orb	Darkmoo n Blade Ring	Cat Covenant Ring	Eye of Death	Dragon Eye
Method of Connecti on	Summone d by others through sign for co-op	Summone d by others through sign for PvP	Invades other player in their world	Invades other player in their world	Invades other player in their world	Invades other player in their world	Summons others into your world for PvP through sign	Summone d by others through sign for PvP
Covenant Restrict ed?	No	No	Yes - Darkwrait h	Yes - Blade of the Darkmoon	Yes - Blade of the Darkmoon	Yes - Forest Hunter	Yes - Gravelord Servant	Yes - Path of the Dragon
Other Condition s for Item User	none	Requires human form	Requires human form	none	none	none	- Requires human form - Area boss must be undefeate d	none
Condition s for Found Player	- Requires human form - Area boss must be undefeate d	- Requires human form - Area boss must be undefeate d*	- Requires human form - Area boss must be undefeate d	- Requires human form and Sin - Area boss must be undefeate d	- Requires human form - Must be in Anor Londo with Gwynever e slain	- Requires human form - Must be in Darkroot Garden with Sif undefeate d	none	- Requires human form - Area boss must be undefeate d*

Spawn Location	Exact location of sign	Exact location of sign	Corresponding spawn locations	Corresponding spawn locations	Set of randomized locations in Dark Anor Londo	Set of randomized locations in Darkroot Garden	Corresponding spawn locations	Corresponding spawn locations
Tips for Successful Use in original	Follow recommended levels for different areas. Place your sign in a high traffic area (near a bonfire or boss fog gate). It will not work in areas where it appears grayed-out in the HUD.	Although you can be summoned by any higher level player, there may be priority given to players of closer levels. Try being within white sign soapstone range of a particular player for better chances.	Do not be too high of a level, because you cannot invade other players much further below your level.	Do not be too low of a level. At low levels, there may not be a sufficient numbers of hosts with sin.	Do not be too low of a level, for the same reason as the Blue Eye Orb. At low levels (roughly below 80), summons can be very rare.	Because you can invade any level higher, the ring is successful at low levels. However, invading much higher players may put you at a disadvantage, so being closer to a common PvP range (~80 - 120 or higher) is recommended over being low level.	The Eye of Death creates a Gravelord Sign that is invisible to the servant. For other players, it appears exactly where the servant is standing (it will move around if the player moves around). Standing in high traffic areas, like near bonfires, is recommended.	Similar to the Eye of Death, placing your sign in a high traffic area is recommended. Due to the requirements, dragon signs aren't frequently seen and are suggested to be used only in popular PvP locations (the Burg, Kiln, Darkroot Garden bonfire, and Oolacile Township bonfire), for best chances of success.
Tips for Successful Use in remaster	Use password matchmaking to bypass level range restrictions.	*No longer pairs infinitely upwards, boss no longer needs to be alive for host.	No longer pairs infinitely upwards.	Do not be too high of a level, as this item no longer invades far below the invader's level.		No longer pairs infinitely upward.		*Boss no longer needs to be alive for host.

Misc.	- - -	Has the best chances for success in popular PvP locations, and areas with optional bosses (due to the host needing to have the area boss still alive).	Has a fairly high success rate and is typically considered the best invasion item. Cracked Red Eye Orbs work the same way, but are not covenant restricted.	Known for a somewhat low success rate, but can work well when being the right level range in higher-traffic areas.	Known for a low success rate with infrequent multiplayer action, especially at low levels.	Known for a high success rate and lots of multiplayer action.	Players are typically unable to see black phantoms in their world until NG+ or higher, so it is recommended that the Gravelord Servant be at a level where the average player-base reaches NG+. Low level gravelording can find players to invade you, but it is not recommended since the phantoms spawn more rarely that way.	The summon sign will appear for other players where the Dragon Eye was used.
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- Common PvP levels determined by unofficial, meta-game standards are 100, 120, and 125.

Level Range Calculators

Level Range Calculator for remastered version (website) - Input any level or weapon upgrade to find out all of the possible level ranges for each multiplayer item.

Level Range Calculator for original version (website) - Input any level to find out all of the possible level ranges for each multiplayer item.

Revision #1

Created 16 December 2024 14:49:45 by jade

Updated 18 December 2024 12:28:05 by jade