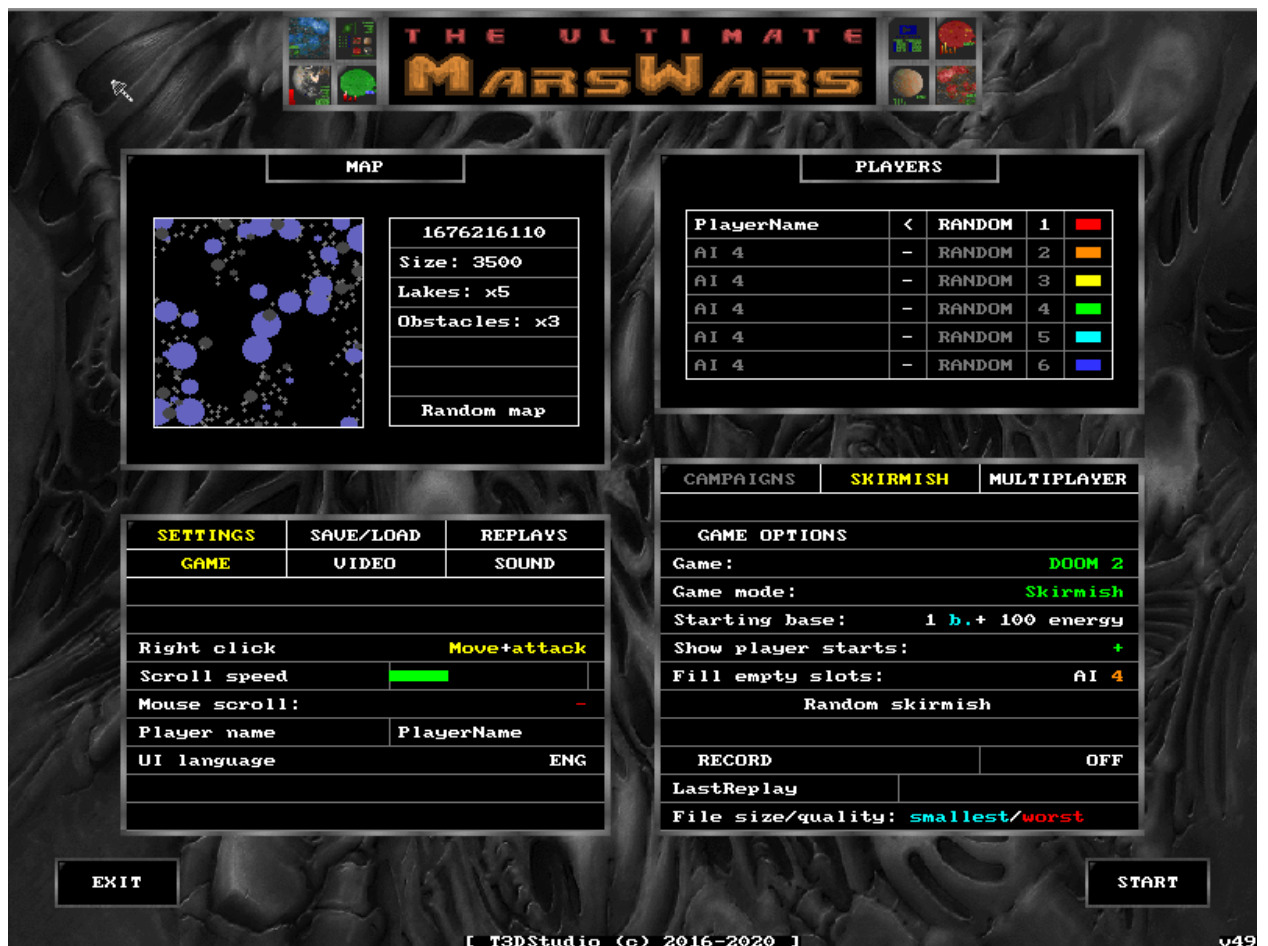# The Ultimate
MarsWars

The Ultimate MarsWars – is a real-time strategy game set in the Doom 2 universe.

Main menu

Section MAP

Map settings:
   Number (0-4294967295) – determines obstacles positions. Right click - generate random value.
   Size – map size in pixels (value between 3000-7000 with step of 500).
   Lakes – "lake's" obstacles part.
   *Obstacles* – count of obstacles.
   Random map – set random map settings.
Liquid type in lakes (water, slime, blood, mud or lava) and land texture depend on *Number*.
Lava and slime do not damage units.

Section PLAYERS

Players table.

Player name	Status	Side	Team	Color
PlayerName	<	RANDOM	1	🟥
AI 4	–	RANDOM	2	🟧
AI 4	–	RANDOM	3	🟨
AI 4	–	RANDOM	4	🟩
AI 4	–	RANDOM	5	🟦
AI 4	–	RANDOM	6	🟦

Fields:

Player name:
- If *Status* = «**C**» (computer player), left click here to switch AI level;
- If *Status* = «**C**» (computer player) or «**-**» (empty slot), right click here to move you on this line.

Status:
- «**-**» – Empty slot;
- «**C**» – Computer player.
  For multiplayer game:
  - «**+**» or «**-**» – Player «ready» status;
  - «**?**» – Connection problem;
  - «**@**» – Host player (server);
  - «**<**» – You position.

Side – Hell or UAC.

Team – 1-6, players with equal team number will be allies.

Color – player color cannot be changed.

In multiplayer game only host-player (server) can change *Status*, *Team* or *AI level* of computer players on this table.

Section SETTINGS

Subsection «GAME»:
   RIGHT CLICK – order type for units on right click.
      If field value = «Move+attack», then order on right click = «*move, attacking all enemies on way*» and right click + *Ctrl* key = «*move, ignoring enemies*».
      If field value = «Move», then right click = «*move, ignoring enemies*» and right click + *Ctrl* key = «*move, attacking all enemies on way*».
   SCROLL SPEED – camera move speed;
   MOUSE SCROLL – turn off/on of mouse scroll;
   PLAYER NAME – you name in game, cannot be changed when game started or multiplayer game created;
   INTERFACE LANGUAGE – English or Russian.
Subsection «VIDEO»:
   WINDOW RESOLUTION: 800*600 / 960*720 / 1024*768;
   WINDOWED – full screen or windowed;
Subsection «SOUND» - music and game sounds volume.

Section SAVE/LOAD

Save and load game. You cannot save/load game in multiplayer mode.

Section REPLAYS

Game replays.

Section CMPAINGS

Missions list of campaign.

Section SCIRMISH

Subsections *GAME OPTIONS* and *RECORD*. You can turn off/on game record anytime.

Section MULTIPLAYER

Server/client settings and game chat.

Dedicated server

Dedicated server – special game console version, where it does not loading any game resources and start working immediately as server.

To start *dedicated server*, run it with follow parameters:

MarsWars_ded.exe [X]

where X - UDP port (optional argument, default value - 10666).

After connect to dedicated server, you can manage it through chat using text commands.
-h or *-help* – show all exist chat-commands;
Game automatically start when all player ready (Field *Ready* = «+»).

Server reset game after 10 seconds after last player disconnect.

Game mechanics

Game control panel

From top to down:

Game minimap:
Minimap alarm indicators types:
- White pulse circle – units alarm;
- White pulse square – buildings alarm.

Line under minimap:
Energy section – free energy level and maximum energy level;
Army section – total number of buildings and all units (units + buildings).

Tabs:
- *Units and buildings*;
- *Upgrades/researches*;
- *Replay management*.

Tab «*replay management*» active only when record playback.

Tab «*units and buildings*»:
- first 9 icons – buildings;
- next 12 icons – units;
- next 3 icons – special units icons (for **UAC** - count of **Mines**, for **Hell** – count of **Zombies** and **Hell Eyes**);
- next 3 icons – icons of some orders;
- last 2 buttons:
-- «Menu»;
-- «Pause» - turn on/off game pause (available only in multiplayer game).

Numbers on tab of «*upgrades/researches*»: white number – time to end of nearest research; yellow number – total count of current researches in progress.
Numbers on icons of buildings/units:
(for buildings and units)
- on right down (orange or gray color): total count of this type of building/unit. If numbers have gray color – count of these buildings/units reached limit;
- on right top (green color): total count of selected buildings/units of this type;
- on left top (yellow color): total count of this buildings/units type in production;
- on left top (white color): time to end of nearest unit production;
- on left down (purple color): number units of this type in selected transport;
(on left down, for buildings only)
- **UAC Radar**, **UAC Tech Center**, **UAC Rocket Launcher Station, Hell Teleport**, **Hell Altar**: reload time;
- **UAC Rocket Launcher Station**: missiles count;
- **Hell Monastery**: Hell Powers's charges;
- **Hell Altar:** Invulnerability spheres;
(for upgrades)
- on right top: green color - research level; gray color – upgrade research level reached maximum; yellow - total count of this upgrade type in production.

Icons hint format

Short description (HOTKEY) [PRODUCTION TIME] {energy} x upgrade max level
Description
Requirements: *(if exits)*

* it possible to produce this upgrade in many buildings at time.

Unit selection and orders

Use left mouse button to select unit and right - to command it.
You can add units to selection with «**Shift**» button. Double click on unit to select all of it type on screen.
To bind units to hotkey-group - select it and press «**Ctrl**»+«**1..9**». Fast double press on group hotkey to move camera to this group. Also, «**Ctrl**»+«**A**» combination will select all battle units on map.
Orders:
- Right click to any point - move and attack all enemy on way;
- Right click with Ctrl - just move;
You can switch these actions in **SETTINGS** section in main menu.
- Right click to enemy unit – attack this enemy unit;
- Right click to ally unit – follow it and attack all enemies on way.

- «Action» («**Ctrl**» + «**Space**» hotkeys or button) – do some ability (if unit have it).

- «Destroy» («**Delete**» hot key or button) – destroy selected units.

- «Cancel» («**Space**» hot key or button) – cancel order (for units – stop here; for production buildings – abort current production);

To fast select some special buildings (**UAC Radar**, **Tech Center,** and **Rocket Station**, **Hell Monastery**, **Teleport** and **Altar**) click on it icon or press hot key.
For buildings, which can produce units, you can set rally-point with right click.

Build base, units and upgrades production

For build you must have at least 1 main building. Press on building icon on control panel to select which building type you need. It start draw circle around cursor. Radius of circle is radius of building. If circle is red - not enough space, if blue - too far from builder, if green - you can start build here. Right click to cancel selection. If icons are disabled, it can mean: there is no one main building, number of buildings of this type reached limit, not enough energy or not satisfied requirements. There is cooldown for 2 seconds between starting build any building.

Unit's icons enabled when there is at least one **Hell Gate** or **UAC Military unit**, army size less than limit, number of this unit less than maximum, enough energy and requirements are satisfied. When you click on unit icon while no one **Hell Gate/UAC Military unit** is selected - order to start produce unit will send to any idle building. If any **HG/MU** is selected - order will send to him. One building can produce only one unit at one time.

For **Hell** side, press on zombie icon to start zombie production in **Hell Military unit** and use «Action» order to change Zombie type.

Upgrades icons enabled when there at least one **Hell Pools** or **UAC Weapon Factory**, enough energy, upgrade research level less than maximum and requirements are satisfied. Most upgrade can be researched in one building at time.

Moving camera

To move camera, use arrows buttons on keyboard or middle mouse button. Also, you can move camera with cursor - move it to screen border (this feature must be turn on in **SETTINGS** section in menu). Change camera scroll speed in **SETTINGS** section in menu.

Hot keys

TAB – switching game control panel tabs;
Tab «*Units and buildings*»:
   Q W E A S D Z X C - buildings;
   R T Y F G H V B N U I O – units;
   M – start zombie production in Hell Military unit;
Tab «*Upgrades/researches*»:
   Q W E A S D Z X C R T Y F G H V B N U I O J K – upgrades;

 - «**Ctrl**» + «**Space**» («Action») – do some ability (if unit have it).
 - «**Delete**» («Destroy») - destroy selected units.
 - «**Space**» («Cancel») – cancel order (for units – stop here; for production buildings – stop current production);
 -«**Alt**» - draw colored rectangles and health bars above units;
 -«**Ctrl**» +«**A**» – select all battle units on map.
 - «**Pause/Break**» – pause/continue game in network game. Client can't cancel server's pause.
 - «**PrtScr**» - make screenshot.

Resources and army limit

There is no gold/wood/minerals/etc. like in other RTS games. There is energy level that means how many units produce/build buildings/research upgrades at one time you can.
Maximum unit count (all units + all buildings!) for all players - 110.

Game settings

Game:
- **DOOM 2** – «*DOOM 2*» mode.
- **UDOOM** – «*The Ultimate DOOM*» mode; there is no additional buildings/units/upgrades and some difference in game balance.

Skirmish - default mode - you must destroy all enemy players;
Two bases - 3x3 – red+orange+yellow vs green+aqua+blue players.
Three bases - 2x2x2 – red+orange vs yellow+green vs aqua+blue players.
Invasion - all players in one team. You need survive for 20 waves of powerful monsters.
Capturing points - there is 6 points on map that needs to capture. Capturing process will be faster if you use many units for this. Point will heal units in it.
Assault – like invasion, but you must destroy enemy base in center of map.

Starting base: player resources on game start;
Show player starts: if "+" game show you players start positions on map.
Fill empty slots: if set, empty player slots will filed with AI players;
Random skirmish: set random map and random game settings.

Units and buildings

Base things for units and buildings

Detector - unit/building that can detect invisible units.
Unfinished buildings have less armor and take more damage. If maximum energy level = 0 - all buildings will explode. In non-campaign games, if player loss all their builders – all his units revealed on map.
Armor will decrease damage.
Every unit can be advanced. Advanced units have some ability or increased some parameters.

Advanced unit have white symbol on selection rectangle: .

Invulnerable unit have white aura: .

Unit-detector have this icon: .

Units categories:
Mechanical:
- **buildings**;
- **mechs**;
Biological:
- **light**;
- **medium**;
- **massive**;

- *Ground*;
- *Air (soaring and fly)*;
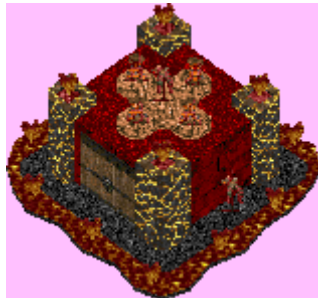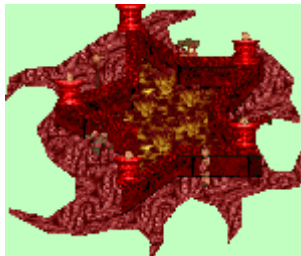
HPS – hits per second.
SDR – splash damage range.

BUILDINGS

HELL

Sprite	Icon / Hot key	Description
	  Q	**Hell Keep** **Hits** 3000 **Size** 66 **Building time** 75 **Base sight radius** 280 **Max count** Unlimited **Energy required** 8 **Energy provided** 6 Main building. Allows you to build base. **Possible upgrades:** - **Hell Keep teleportation** – allow **HK** to teleport to any map place; - **Decay Aura** – **HK** start damage enemy units around; - **Sight radius upgrade**; - **Free teleportation** – allow **HK** teleporting on map obstacles; - **Built-in Hell Symbol** – increase provided energy level.
	  W	**Hell Gate** **Hits** 1500 **Size** 60 **Building time** 41 **Sight radius** 200 **Max count** Unlimited **Energy required** 4 Produce units.
	  E	**Hell Symbol** **Hits** 200 **Size** 24 **Building time** 10 **Sight radius** 200 **Max count** Unlimited **Energy required** 1 **Energy provided** 1 Provide energy. **Possible upgrades:** - **Short distance teleportation**;

	  A	**Hell Pool** **Hits** 1000 **Size** 53 **Building time** 41 **Sight radius** 200 **Max count** Unlimited **Energy required** 6 Research upgrades.
	  S	**Hell Tower** **Hits** 700 **Size** 21 **Building time** 20 **Base sight/attack radius** 250 **Max count** Unlimited **Energy required** 2 Defense structure. Attacking all units with **Revenant** fireballs, but **Revenants** - with **Cacodemon** fireballs. **Possible upgrades:** **- Range attack upgrade**; - **Attack/sight radius upgrade**; - **Short distance teleportation**.
	  D	**Hell Teleport** **Hits** 500 **Size** 28 **Building time** 25 **Sight radius** 200 **Max count** 1 **Energy required** 4 Teleport units to any point: select **Hell Teleport** and do right click to set destination point; select units and do right click on **Hell Teleport** or it icon. Reload time after teleportation depend from unit power. Can teleport allies units. **Possible upgrades:** - **Teleport upgrade** – decrease reload time; - **Reverse teleport** - units can teleport back to **Hell Teleport**.

	Z	**Hell Monastery** **Hits** 1000 **Size** 65 **Building time** 100 **Sight radius** 200 **Max count** Unlimited **Energy required** 10 **Requirements** *Hell Pool* building Can advance units. **Possible upgrades:** - **Hell Power** – charges for units advancing; There is 2 methods to make advance any unit: 1) Select **Hell Monastery** and do right click on unit; 2) Select unit and do right click to **Hell Monastery** building or it icon on control panel;
	X	**Hell Totem** **Hits** 600 **Size** 21 **Building time** 25 **Base sight/attack radius** 250 **Max count** Unlimited **Energy required** 3 **Requirements** *Hell Monastery* building / *Ancient Evil* upgrade Advanced defense structure. Attacking like **ArchVile** unit. **Possible upgrades:** - **Range attack upgrade**; - **Attack/sight radius upgrade**; - **Short distance teleportation**; - **Invisibility**.
	C	**Hell Altar** **Hits** 750 **Size** 50 **Building time** 31 **Sight radius** 200 **Max count** 1 **Energy required** 4 **Requirements** *Hell Monastery* building / *Ancient Evil* upgrade Cast **Invulnerability** on units. **Possible upgrades:** - **Invulnerability**- charges for ability.

SPECIAL BUILDINGS

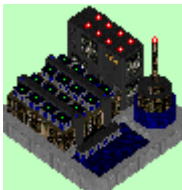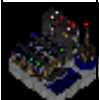|	
	Hell Eye **Base sight radius** 250 **Max count** Unlimited **Requirements** *Lost Soul* unit *Hell Eye* upgrade Detector. Summoned by a **Lost Soul**. Live time - 2 minutes. Dies after single hit. **Possible upgrades:** - **Hell Eye** – increase sight radius; - **Invisibility**;
	Hell Military Unit **Hits** 1500 **Size** 70 **Sight radius** 200 **Max count** Unlimited **Requirements** advanced *Lost Soul* unit Produce **zombies** and **Hell** units. To start **zombie** production – press bottom on control panel or **M** hot key. To change **zombie** type – select **Hell Military Unit** and do «Action» order.
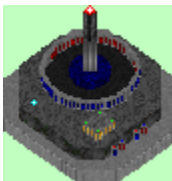
Possible upgrades for all Hell buildings:
- **Buildings armor upgrade**;
- **Building restoration** – restoration for damaged buildings.
In **UDOOM** game mode **Building restoration** ability working without upgrade.

Hell can't build **Hell Totem** and **Hell Altar** in **UDOOM** mode.

UAC

Sprite	Icon / Hot key	Description
	Q	**UAC Command Center** **Hits** 4000 **Size** 66 **Building time** 93 **Base sight radius** 280 **Max count** Unlimited **Energy required** 8 **Energy provided** 6 Main building. Allows you to build base. **Possible upgrades:** - **Command Center flight** - **Command Center** gains ability to fly (use «Action» order to fly up or land **CC**); - **Sight radius upgrade**; this upgrade have effect on **CC** only when it on ground; - **Command Center Turret** – **CC** can attack when it flying (attacking like **Major**, 2 HPS, 250 range); - **Free placement** – **CC** can land to obstacles.
	W	**UAC Military Unit** **Hits** 1700 **Size** 66 **Building time** 40 **Sight radius** 200 **Max count** Unlimited **Energy required** 4 Produce units.
	E	**UAC Generator** **Hits** 400 **Size** 42 **Building time** 20 **Sight radius** 200 **Max count** Unlimited **Energy required** 2 **Energy provided** 2 Provide energy.

	  A	**UAC Weapon Factory** **Hits** 1700 **Size** 62 **Building time** 40 **Sight radius** 200 **Max count** Unlimited **Energy required** 6 Research upgrades.
	  S	**UAC Chaingun Turret** **Hits** 400 **Size** 17 **Building time** 15 **Base sight/attack radius** 250 **Max count** Unlimited **Energy required** 2 **Attack** 12 4 HPS Defense structure. Attacking like **Mastermind** unit. **Possible upgrades:** **- Range attack upgrade**; - **Attack/sight radius upgrade**; - **Turrets armor**; - **Rocket turrets** – can upgrade to **Rocket turret** (use «Action» order, required 2 energy points and **UAC Tech Center**).
	  D	**UAC Radar** **Hits** 500 **Size** 35 **Building time** 31 **Base sight radius** 200 **Max count** 1 **Energy required** 2 Reveals map. To reveal any map area – select **Radar** and do right click on this area. **Possible upgrades:** - **Detectors**; - **Radar upgrade** - Increase radar scouting time and radius.

	Z	**UAC Tech Center** **Hits** 1700 **Size** 62 **Building time** 94 **Sight radius** 200 **Max count** 1 **Energy required** 10 **Requirements** *UAC Weapon Factory* building Can advance units. **Possible upgrades:** - **Advanced armory** - **Tech Center** will be able to upgrade units; - **Fast rearmament** - decrease **Tech Center** upgrade reloads time. To advance unit, select unit and do right click on **Tech Center** or it icon on control panel.
	X	**UAC Plasma Turret** **Hits** 400 **Size** 17 **Building time** 20 **Base sight/attack radius** 250 **Max count** Unlimited **Energy required** 2 **Requirements** *UAC Weapon Factory* building Defense structure. Attacking like **Major** unit. **Possible upgrades:** - **Range attack upgrade**; - **Attack/sight radius upgrade**; - **Turrets armor**; - **Rocket turrets** – can upgrade to **Rocket turret** (use «Action» order, required 2 energy points and **UAC Tech Center**).
	C	**UAC Rocket Launcher Station** **Hits** 500 **Size** 40 **Building time** 31 **Sight radius** 200 **Max count** 1 **Energy required** 4 **Requirements** *UAC Tech Center* building Provide a missile strike. Missile strike requires "**Missile strike**" research. Missile have 250 damage and 150 **SDR**. Deal x0,25 damage to _light_ units, x1,5 to _buildings_ and x0,5 to _air_.

SPECIAL BUILDINGS

	---	**Mine** **Hits** 1 **Size** 5 **Base sight radius** 100 **Max count** Unlimited **Requirements** advanced *Engineer* unit Set by advanced **UAC Engineers**. **Possible upgrades:** **- Detectors**; - **Mine-sensor** – mine can switch to sensor mode that provide 300 sight ranges and not explode under enemy unit (use «Action» order to switch mode).

	---	**UAC Rocket Turret**
		
		Hits 500
		Size 17
		Building time 20
		Base sight/attack radius 250 common
		                                190 against *air*
		Max count Unlimited
		Energy required 2
		Requirements *UAC Tech Center* building
		                                Rocket turrets upgrade
		
		Defense structure. Attacking like **Cyberdemon** unit with 0,6 HPS.
		
		Possible upgrades:
		- Range attack upgrade;
		- **Attack/sight radius upgrade**;
		- **Turrets armor**;

Possible upgrades for all UAC buildings:
- **Buildings armor upgrade**.

UAC can't build **UAC Rocket Launcher** and **UAC Rocket Turret** in **UDOOM** mode.

UNITS

All **Hell** units have *«pain state»* - state when it stun and cannot attack and move. *«Pain state»* happens every X hit from most attacks or more often from other.

Sprite	Icon / hot key	Description
	   R	**Lost Soul** **Class** *soaring, light* **Hits** 90 **Production time** 8 **Energy required** 1 **Speed** 23 **Size** 10 **Sight/attack radius** 250 **Pain state** every 3 hit **Attack** 10 / 1 HPS Fast air melee unit. Deal x0,5 damage to <u>ground</u> units and x0,25 to <u>mechanical</u> units. Advanced **Lost Soul** can capture **UAC infantry/UAC Military Unit** and transform it to **zombies/Hell Military Unit** (**UAC Military Unit** must have < 2/3 hits). **Possible upgrades:** - **Melee attack upgrade**; - **Hell Eye** – **Lost Soul** can transform to **Hell Eye** (use «Action» order);
	   T	**Imp** **Class** *ground, light* **Hits** 70 **Production time** 5 **Energy required** 1 **Speed** 9 **Size** 12 **Sight/attack radius** 250 **Pain state** every 3 hit **Attack** 12 / 1 HPS Weak ground unit with ranged attack. Deal x0,5 damage to <u>air</u> and <u>mechanical</u> units. Attacking other **Imps** only with melee attack (damage same as ranged attack). Advanced **Imp** has 2 HPS. **Possible upgrades:** - **Firepower** – increase missiles speed.

		Demon	
		Class	*ground, medium*
		Hits	150
	Y	**Production time**	8
		Energy required	2
		Speed	15
		Size	14
		Sight/attack radius	200
		Pain state	every 8 hit
		Attack	40 1 HPS
		Base armor	2

Fast ground unit with melee attack. Cannot attack *air* units (except Lost Soul). Advanced **Demon** has invisibility.

Possible upgrades:
- **Demon**'s anger – increase Demon's movement speed and attack.

		Cacodemon	
		Class	*air, medium*
		Hits	225
	F	**Production time**	20
		Energy required	2
		Speed	9
		Size	14
		Base sight/attack radius	250
		Pain state	every 6 hit
		Attack	25 0,8 HPS
		Base armor	2

Air unit with ranged attack. Deal x1,25 damage to *light* units, 0,75 to *air* and *massive* units, x0,5 to *mechanical* units. Attacking other **Cacodemons** only with melee attack (damage same as ranged attack). Advanced **Cacodemon** has 275 attack and sight ranges.

Possible upgrades:
- **Firepower** – increase missiles speed.

		Baron of Hell / Hell Knight	
		Class	*ground, medium*
		Hits	350
		Production time	40
		Energy required	4
	G	**Speed**	9
		Size	14
		Sight/attack radius	250 common 190 against *air*
		Pain state	every 8 hit
		Attack	50 0,8 HPS
		Base armor	3

Heavy ground unit with ranged attack. Attacking other **Barons/Knights** only with melee attack (damage same as ranged attack). Deal x0,5

damage to _light_ units, x0,75 to _air_ and _mechanical_ units. **Baron Of Hell** (red skin) – it advanced **Hell Knight** (white skin). **Baron Of Hell** take x0,5 damage. In **UDOOM** mode this unit spawns as **Baron Of Hell**.

Possible upgrades:
- Firepower – increase missiles speed.

Cyberdemon

Class	_ground, massive_
Hits	2000
Production time	90
Energy required	8
Speed	10
Size	20
Base sight/attack radius	250 common 190 against _air_
Pain state	every 15 hit
Attack	100 0,85 HPS 45 SDR
Base armor	3
Max count	1
Requirements	_Hell Monastery_ building

Heavy ground unit with ranged attack. Deal x1,5 damage to _buildings_ and x0,5 to _light_ units. You can't product **Cyberdemon** when **Mastermind** production in progress. Don't take splash-damage from rockets and grenades. Advanced **Cyberdemon** has 275 attack (against _ground_) and sight ranges.

Spider Mastermind

Class	_ground, massive_
Hits	2000
Production time	90
Energy required	8
Speed	10
Size	35
Base sight/attack radius	250 common 190 against _air_
Pain state	every 15 hit
Attack	12 9 HPS
Base armor	3
Max count	1
Requirements	_Hell Monastery_ building

Heavy ground unit with ranged attack. Deal x0,5 damage to _buildings_, x0,75 to _mechs_ and x1,5 to _light_ units. You can't product **Mastermind** when **Cyberdemon** production in progress. Don't take splash-damage from rockets and grenades. Advanced **Mastermind** has 275 attack (against _ground_) and sight ranges.

	B	**Pain Elemental**	
		Class	*air, medium*
		Hits	200
		Production time	40
		Energy required	6
		Speed	9
		Size	14
		Sight radius	250
		Attack radius	350
		Pain state	every 3 hit
		Attack	spawn **Lost Soul** 0.6 HPS
		Requirements	*Hell Monastery* building
		Flying unit. Spawn **Lost Soul** on attack or on «Action» order. Advanced **Pain Elemental** spawn advanced **Lost Souls** and spawn 3 **Lost Souls** after death.	
	N	**Revenant**	
		Class	*ground, light*
		Hits	200
		Production time	40
		Energy required	4
		Speed	12
		Size	13
		Base sight/attack radius	250
		Pain state	every 7 hit
		Attack	30 0.8 HPS
		Requirements	*Hell Monastery* building
		Ground unit with ranged attack. Deal x1,5 damage to *mechs* and x0,75 to *air* and *buildings*. Attacking other **Revenants** only with melee attack (damage same as ranged attack). Advanced **Revenant** has 325 attack ranges. **Possible upgrades:** - **Revenant missile upgrade** - missiles become homing.	
	U	**Mancubus**	
		Class	*ground, massive*
		Hits	400
		Production time	60
		Energy required	6
		Speed	6
		Size	20
		Sight radius	250
		Attack radius	300 common 150 against *air*
		Pain state	every 4 hit
		Attack	35x2 1.2 HPS
		Base armor	3
		Requirements	*Hell Monastery* building *Ancient Evil* upgrade
		Strong ground unit with ranged attack. Deal x1,5 to *buildings*, x0,5 to *light* units and x0,75 to *air* and *mechs*. Cannot attack other **Mancubus**. Advanced **Mancubus** have «*pain state*» resist.	

		Arachnotron	
	I	Class	*ground, massive*
		Hits	350
		Production time	60
		Energy required	6
		Speed	9
		Size	20
		Sight/attack radius	250
		Pain state	every 4 hit
		Attack	15 4 HPS
		Base armor	4
		Requirements	*Hell Monastery* building *Ancient Evil* upgrade

Strong ground unit with ranged attack. Deal x0,5 damage to all <u>ground</u> units. Cannot attack other **Arachnotrons**. Advanced **Arachnotron** has 350 attack ranges against <u>air</u>.

		ArchVile	
	O	Class	*ground, medium*
		Hits	400
		Production time	90
		Energy required	10
		Speed	15
		Size	15
		Sight radius	250
		Attack radius	400
		Pain state	every 12 hit
		Attack	90 0.4 HPS 15 SDR
		Base armor	3
		Requirements	*Hell Altar* building *Ancient Evil* upgrade

Strong ground unit with ranged attack. Deal x0,5 damage to <u>buildings</u>. Advanced **ArchVile** can resurrect dead units.

SPECIAL UNITS

	Zombies	
	Class	*ground / air, light*
	Size	12
	Pain state	every 2 hit

UAC Infantry that corrupted by advanced **Lost Soul**. **Zombies** don't have **UAC Infantry** abilities (**Engineer's mines**, **Medic's** paralyze bullets).

Possible upgrades for all Hell units:
- **Ranged attack upgrade** (for units with ranged attacks);
- **Unit armor upgrade**;
- **Regeneration** – damaged units will slowly regenerate their health;
- **Pain threshold** - decrease "pain state" chance.

UAC UNITS

UAC units have no «*pain state*».

Sprite	Icon / hot key	Description
	R	**Engineer** **Class** — *ground, light* **Hits** — 100 **Production time** — 8 **Energy required** — 1 **Speed** — 13 **Size** — 12 **Sight/attack radius** — 220 common / 165 against *air* **Attack** — 6 / 1.7 HPS **Place in transport** — 1 Weak ground unit with ranged attack. Can repair own and allies damaged *mechanical* units. Deal x1,5 damage to *light* units, x0,5 to *massive* and x0,25 to *mechanical* units. Advanced **Engineer** can paralyze *mechs* when attack it. **Possible upgrades:** - **Advanced repair and healing** - increase the efficiency of repairing; - **Mines** - **Engineer** can set **Mines** (use «Action» order).
	T	**Medic** **Class** — *ground, light* **Hits** — 100 **Production time** — 8 **Energy required** — 1 **Speed** — 13 **Size** — 12 **Sight/attack radius** — 220 common / 165 against *air* **Attack** — 6 / 1.5 HPS **Place in transport** — 1 Weak ground unit with ranged attack. Can repair own and allies damaged *biological* units. Deal x1,5 damage to *light* units, x0,5 to *massive* and x0,25 to *mechanical* units. Advanced **Medic** can paralyze *biological* units. **Possible upgrades:** - **Advanced repair and healing** - increase the efficiency of healing.

		Sergeant	
	Y	**Class**	*ground, light*
		Hits	100
		Production time	10
		Energy required	2
		Speed	13
		Size	12
		Sight/attack radius	240 common 180 against _air_
		Attack	**Not advanced**: **Advanced**: - min: 9 - min: 12 - max: 28 - max: 41 max SDR: 30 max SDR: 40 1 HPS, min SDR: 10
		Place in transport	1

Ground unit with ranged attack. Deal x0,5 damage to _fly_, _light_ and _massive_ units, x0,25 to _mechanical_ units. Damage and splash-range depends from distance to target. Advanced **Sergeant** deal more damage and have more SDR. **Sergeant's** attack set Hell units into «*pain state*» more often than other units attack.

		Commando	
	F	**Class**	*ground, light*
		Hits	100
		Production time	15
		Energy required	2
		Speed	11
		Size	12
		Sight/attack radius	250 common 220 against _air_
		Attack	6 8 HPS
		Place in transport	1

Ground unit with ranged attack. Deal x1,5 damage to _light_ units, x0,5 to _massive_ and x0,25 to _mechanical_ units. Advanced **Commando** has invisibility.

		Artillery soldier	
	G	**Class**	*ground, light*
		Hits	100
		Production time	30
		Energy required	4
		Speed	10
		Size	12
		Base sight/attack radius	250
		Attack	50 0.6 HPS
		Place in transport	1
		Requirements	**UAC Weapon Factory** building

		Ground unit with ranged attack. Deal x1,5 damage to _buildings_ and x0,5 damage to _light_ and _mechs_ units. Cannot attack _air_ units. Cannot attack units closer than 45 pixels. Advanced **Artillery soldier** have 275 attack and sight radius.

	H	**Major**
		
		 Class _ground/air, light_
		 Hits 100
		 Production time 20
		 Energy required 4
		 Speed **Not advanced**: 9
		            Advanced: 13
		 Size 12
		 Sight/attack radius 250
		 Attack 15
		            4 HPS
		 Place in transport 1
		 Requirements **UAC Weapon Factory** building
		
		Ground/air unit with ranged attack. Deal x1,5 damage to _mechs,_ x0,5 _light_ and _air_ units, x0,75 to _buildings_. Advanced **Major** can fly.

	V	**BFG Marine**
		
		 Class _ground, light_
		 Hits 100
		 Production time 60
		 Energy required 5
		 Speed 10
		 Size 12
		 Sight/attack radius 250
		            125
		 Attack 125 SDR
		            0.4 HPS
		 Place in transport 1
		 Requirements **UAC Weapon Factory** building
		
		Ground unit with ranged attack. Deal x0,5 damage to _light, mechs_ units and _buildings_. Advanced **BFG Marine** has 275 attack and sight ranges.

Possible upgrades for all UAC Infantry:
- **Infantry armor upgrade**;
- **Lightweight armor** - increase infantry move speed

		Air APC	
	B	**Class**	*mech, ground*
		Hits	250
		Production time	25
		Energy required	3
		Speed	22
		Size	33
		Sight/attack radius	250
		Attack (upgrade)	6/12 2 HPS
		Base transport place count	10
		Base armor	3
		Requirements	**UAC Weapon Factory** building

Fast air transport. Can transporting all ground UAC units. Advanced **Air APC** has 14 places.

Possible upgrades:
- **APC turret** – give to APC weapon.

		Ground APC	
	N	**Class**	*mech, ground*
		Hits	350
		Production time	25
		Energy required	3
		Speed	15
		Size	15
		Sight/attack radius	250
		Attack (after upgrade)	6/12 2 HPS
		Base transport place count	4
		Base armor	3
		Places in transport	8
		Requirements	**UAC Weapon Factory** building

Fast ground transport. Can transporting all ground **UAC infantry**. Advanced **Air APC** has 6 places. Marines can attack while they in APC.

Possible upgrades:
- **APC turret** – give to APC weapon.

		Terminator	
	O	**Class**	*mech, ground*
		Hits	350
		Production time	60
		Energy required	6
		Speed	14
		Size	16
		Sight/attack radius	275 common
		Attack	6/12 8 HPS
		Base armor	3
		Place in transport	3
		Requirements	**UAC Tech Center** building **High technologies** upgrade

Heavy ground unit with ranged attack. Attacking with chain gun (not advanced - like **Commando**/advanced like **Mastermind**).

		Tank	
	U	**Class**	*mech, ground*
		Hits	400
		Production time	60
		Energy required	8
		Speed	10
		Size	20
		Sight/attack radius	250
		Attack	45 SDR 0.6 HPS
		Base armor	3
		Place in transport	7
		Requirements	**UAC Tech Center** building **High technologies** upgrade

Heavy ground unit with ranged attack. Deal x1,5 damage to *buildings* and x0,5 damage to *light* units. Cannot attack *air* units. Cannot attack units closer than 45 pixels. Advanced **Tank** has 325 attack ranges.

		Flyer	
	I	**Class**	*mech, air*
		Hits	350
		Production time	60
		Energy required	8
		Speed	19
		Size	18
		Sight/attack radius	275
		Attack	30 2 HPS
		Base armor	3
		Requirements	**UAC Tech Center** building **High technologies** upgrade
		Heavy ground unit with ranged attack. Deal x0,5 damage to <u>*ground*</u> units and <u>*buildings*</u>. Advanced **Flyer** can attack in moving.	

Possible upgrades for all UAC Mechs:
- **Mech armor upgrade**;
- **Advanced engines** - increase <u>*mechs*</u> move speed.

OTHER UNITS

Sprite	Description

UPGRADES

Hell

Icon / Hot key	Time Energy Level	Description	Requirements
Q	180 4 4	**Range attack upgrade** Increase ranged attacks damage.	
W	180 4 4	**Unit armor upgrade** Increase units armor.	
E	120 4 4	**Buildings armor upgrade** Increase buildings armor.	
A	60 2 3	**Melee attack upgrade** Increase melee attacks damage.	
S	120 3 2	**Regeneration** Damaged units will slowly regenerate their health.	
D	60 2 4	**Pain threshold** Decrease "pain state" chance.	
Z	120 3 3	**Hell Eye** Lost Soul ability & Hell Eye sight radius. In **UDOOM** game mod, last level of upgrade make **Hell Eye** invisible.	
X	120 3 3	**Tower range upgrade** Increased range of defensive structures.	
C	120 2 3	**Teleport upgrade** Decrease teleport cooldown.	
R	180 3 1	**Hell Keep teleportation** Hell keep can teleport to any place.	

T	120 3 2	**Decay Aura** **Hell Keep** will damage all enemies around. Also, this aura neutralize stun effects on own and allied units. **Decay Aura** deal more damage to *mechanical* units.	
Y	120 2 2	**Hell Keep range upgrade** Increased Hell Keep view/build range.	
F	60 3 1	**Demon`s anger**  Increased Demon`s movement and attack speed.	
G	120 2 1	**Firepower** Increase missiles speed for **Imp**, **Cacodemon** and **Baron of Hell/Hell Knight**.	
H	20 8 15	**Hell power** Allow Hell Monastery upgrade units.	**Hell Monastery** building
V	180 10 1	**Ancient evil** New buildings, units and upgrades.	
B	120 3 1	**Reverse teleport** Units can teleport back to Hell Teleport.	**Hell Monastery** building **Ancient evil** upgrade
N	120 2 1	**Revenant missile upgrade** Missiles become homing	
U	120 2 1	**Hell Totem and Eye invisibility**	
I	120 2 3	**Building restoration** Damaged buildings will slowly regenerate their health.	
O	60 2 1	**Free teleportation** Hell Keep can teleport on obstacles.	

Icon / Hot key	Time Energy Level	Description	Requirements
J	30 1 15	**Short distance teleportation** Hell Symbols, Towers, Totems and Altars can teleport to short distance.	
K	180 10 3	**Invulnerability** All hell units become invulnerable for 15 seconds.	**Hell Altar** building **Ancient evil** upgrade
L	180 4 4	**Built-in Hell Symbol** Additional energy for Hell Keep.	

UAC

Icon / Hot key	Time Energy Level	Description	Requirements
Q	180 4 4	**Range attack upgrade** Increase ranged attacks damage.	
W	120 4 5	**Unit armor upgrade** Increase units armor.	
E	180 4 4	**Buildings armor upgrade** Increase buildings armor.	
A	60 3 3	**Advanced repair and healing** Increases the efficiency of repair/healing of Engineers and Medics.	
S	120 3 2	**Lightweight armor** Increase infantry move speed.	
D	120 2 2	**APC turret** Weapon for APCs.	
Z	120 3 1	**Detector device** Radar and mines becomes detectors.	

X	120 3 3	**Turrets range upgrade** Increased attack range of defensive structures.	
C	120 2 3	**Radar upgrade** Increase radar scouting time and radius.	
R	180 3 1	**Command Center engines** Command Center gains ability to fly.	
T	180 4 1	**Command Center turret** Flying Command Center will be able to attack	**Command Center engines** upgrade
Y	120 2 2	**Command Center range** Increased Command Center view/build range.	
F	120 2 2	**Mines** **Engineer** ability.	
G	60 2 1	**Mine-sensor** Mine ability.	**Mines** upgrade
H	180 8 1	**Advanced armory** Tech Center will be able to upgrade own units.	**UAC Tech Center** building
V	180 8 1	**High technologies** New buildings, units and upgrades.	
B	180 10 8	**Missile strike** Missile for Rocket Launcher Station.	
N	120 3 2	**Advanced engines** Increase mechs move speed.	**UAC Tech Center** building **High technologies** upgrade
U	180 4 4	**Mech armor upgrade** Increase mechs armor.	

I	**120** **2** **1**	**Fast rearming** Decrease Tech Center upgrade reloads time.	
O	**60** **2** **1**	**Free placement** Command center will be able to land on obstacles.	**UAC Tech Center** building **High technologies** upgrade
J	**120** **3** **2**	**Turrets armor** Additional armor for turrets.	
K	**180** **4** **1**	**Rocket turrets** Turrets can upgrade to Rocket turrets.	
L	**180** **4** **2**	**Built-in generator** Additional energy for Command Center.	