

Heroes of Might and Magic Savegame File Format (*.GM1, *.GM2, *.GM3, *.GM4, *.CGM, ORIGDATA.BIN)					
#	Name	Field Type	Offset	Size	Comments
1	Game.KingOfTheHill	db	00000	1	1 if yes, otherwise 0
2	Game.Rating	dw	00001	2	Total rating in %
3	Game.MonthType	db	00003	1	-1; 0: Nothing; 1: Double growth; 2: Plague
4	Game.MonthID	db	00004	1	-1; MonthType = 0: R(0..9); MonthType = 1: T[R(0..11)]
5	Game.WeekType	db	00005	1	-1; 0: Nothing; 1: +5 growth
6	Game.WeekID	db	00006	1	-1; WeekType = 0: R(0..14); WeekType = 1: R(0..23)
7	Campaign.Side	dd	00007	4	0; 1: Ironfist; 2: Slayer; 3: Lamanda; 4: Alamar
8	Campaign.Map	dd	0000B	4	Counting from 0 (8 for the "Dragon Island" map)
9	Campaign.Days	dd	0000F	4	Counting from 0 (Days spent so far)
10	Campaign.Scenario	dd	00013	4	Counting from 0 (7 for the last scenario)
11	Dummy[44]	db	00017	44	Always 0
12	Map.Description[121]	db	00043	121	Null-terminated string, 120 characters
13	Map.Size	db	000BC	1	0: Small; 1: Medium; 2: Large
14	Map.Difficulty	db	000BD	1	0: Easy; 1: Normal; 2: Tough; 3: Impossible
15	Map.Name[17]	db	000BE	17	Null-terminated string, 16 characters
16	File.Name[17]	db	000CF	17	Null-terminated string, 16 characters
17	Game.Difficulty	db	000E0	1	0: Easy; 1: Normal; 2: Hard; 3: Expert
18	Game.Players	db	000E1	1	Starting # of Players
19	Game.ActivePlayer	db	000E2	1	0: Player 1; 1: Player 2; 2: Player 3; 3: Player 4
20	Game.DeadPlayers	db	000E3	1	# of players vanquished
21	Game.CompHumanPlayer[4]	db	000E4	4	1 if neither, otherwise 0
22	Game.OnlyHumanPlayer[4]	db	000E8	4	1 if human, otherwise 0
23	Game.Day	dw	000EC	2	[1..7]
24	Game.Week	dw	000EE	2	[1..4]
25	Geme.Month	dw	000F0	2	[1..65535]
26	Player[0].Name[17]	db	000F2	17	"Player 1" by default
27	Player[0].Color	db	00103	1	0: Blue; 1: Green; 2: Red; 3: Yellow
28	Player[0].SkillLevel	db	00104	1	0: None; 1: Dumb; 2: Average; 3: Smart; 4: Genius

29	Player[0].Heroes	db	00105	1	# of Heroes
30	Player[0].HeroSelected	db	00106	1	-1 if none, otherwise [Hero.ID]
31	Player[0].HeroListScroll	db	00107	1	Scroll position: [0..4]
32	Player[0].HeroOwned[8]	db	00108	8	-1 if none, otherwise [Hero.ID]
33	Player[0].TavernHero[2]	db	00110	2	Left: TavernHero[0]; Right: TavernHero[1]
34	Player[0].Dummy[50]	db	00112	50	Always 0
35	Player[0].UA.Probability	db	00144	1	0 for human players
36	Player[0].UA.X	db	00145	1	Always -1
37	Player[0].UA.Y	db	00146	1	Always -1
38	Player[0].DaysTillLose	db	00147	1	-1 if Player 1 has at least 1 town
39	Player[0].Towns	db	00148	1	# of Towns
40	Player[0].TownSelected	db	00149	1	-1 if none, otherwise [Town.ID]
41	Player[0].TownListScroll	db	0014A	1	Scroll position: [0..4]
42	Player[0].TownOwned[36]	db	0014B	36	-1 if none, otherwise [Town.ID]
43	Player[0].Resource[7]	dd	0016F	28	Wood, Mercury, Ore, Sulfur, Crystal, Gems, Gold
44	Player[0].Income[7]	dd	0018B	28	At the beginning of the day
45	Player[0].Dummy[2]	db	001A7	2	Always 0
47	Player[0].PuzzlePiece[6]	db	001A9	6	BitField[6][8]: puzzle pieces revealed
48	Player[1].Name[17]	db	001AF	17	"Player 2" by default
49	Player[1].Color	db	001C0	1	0: Blue; 1: Green; 2: Red; 3: Yellow
50	Player[1].SkillLevel	db	001C1	1	0: None; 1: Dumb; 2: Average; 3: Smart; 4: Genius
51	Player[1].Heroes	db	001C2	1	# of Heroes
52	Player[1].HeroSelected	db	001C3	1	-1 if none, otherwise [Hero.ID]
53	Player[1].HeroListScroll	db	001C4	1	Scroll position: [0..4]
54	Player[1].HeroOwned[8]	db	001C5	8	-1 if none, otherwise [Hero.ID]
55	Player[1].TavernHero[2]	db	001CD	2	Left: TavernHero[0]; Right: TavernHero[1]
56	Player[1].Dummy[50]	db	001CF	50	Always 0
57	Player[1].UA.Probability	db	00201	1	Chances to find the exact location of UA in %
58	Player[1].UA.X	db	00202	1	Ultimate Artifact X location, or estimate
59	Player[1].UA.Y	db	00203	1	Ultimate Artifact Y location, or estimate
60	Player[1].DaysTillLose	db	00204	1	-1 if Player 2 has at least 1 town

61	Player[1].Towns	db	00205	1	# of Towns
62	Player[1].TownSelected	db	00206	1	-1 if none, otherwise [Town.ID]
63	Player[1].TownListScroll	db	00207	1	Scroll position: [0..4]
64	Player[1].TownOwned[36]	db	00208	36	-1 if none, otherwise [Town.ID]
65	Player[1].Resource[7]	dd	0022C	28	Wood, Mercury, Ore, Sulfur, Crystal, Gems, Gold
66	Player[1].Income[7]	dd	00248	28	At the beginning of the day
67	Player[1].Dummy[2]	db	00264	2	Always 0
69	Player[1].PuzzlePiece[6]	db	00266	6	BitField[6][8]: puzzle pieces revealed
70	Player[2].Name[17]	db	0026C	17	"Player 3" by default
71	Player[2].Color	db	0027D	1	0: Blue; 1: Green; 2: Red; 3: Yellow
72	Player[2].SkillLevel	db	0027E	1	0: None; 1: Dumb; 2: Average; 3: Smart; 4: Genius
73	Player[2].Heroes	db	0027F	1	# of Heroes
74	Player[2].HeroSelected	db	00280	1	-1 if none, otherwise [Hero.ID]
75	Player[2].HeroListScroll	db	00281	1	Scroll position: [0..4]
76	Player[2].HeroOwned[8]	db	00282	8	-1 if none, otherwise [Hero.ID]
77	Player[2].TavernHero[2]	db	0028A	2	Left: TavernHero[0]; Right: TavernHero[1]
78	Player[2].Dummy[50]	db	0028C	50	Always 0
79	Player[2].UA.Probability	db	002BE	1	Chances to find the exact location of UA in %
80	Player[2].UA.X	db	002BF	1	Ultimate Artifact X location, or estimate
81	Player[2].UA.Y	db	002C0	1	Ultimate Artifact Y location, or estimate
82	Player[2].DaysTillLose	db	002C1	1	-1 if Player 3 has at least 1 town
83	Player[2].Towns	db	002C2	1	# of Towns
84	Player[2].TownSelected	db	002C3	1	-1 if none, otherwise [Town.ID]
85	Player[2].TownListScroll	db	002C4	1	Scroll position: [0..4]
86	Player[2].TownOwned[36]	db	002C5	36	-1 if none, otherwise [Town.ID]
87	Player[2].Resource[7]	dd	002E9	28	Wood, Mercury, Ore, Sulfur, Crystal, Gems, Gold
88	Player[2].Income[7]	dd	00305	28	At the beginning of the day
89	Player[2].Dummy[2]	db	00321	2	Always 0
91	Player[2].PuzzlePiece[6]	db	00323	6	BitField[6][8]: puzzle pieces revealed
92	Player[3].Name[17]	db	00329	17	"Player 4" by default
93	Player[3].Color	db	0033A	1	0: Blue; 1: Green; 2: Red; 3: Yellow

94	Player[3].SkillLevel	db	0033B	1	0: None; 1: Dumb; 2: Average; 3: Smart; 4: Genius
95	Player[3].Heroes	db	0033C	1	# of Heroes
96	Player[3].HeroSelected	db	0033D	1	-1 if none, otherwise [Hero.ID]
97	Player[3].HeroListScroll	db	0033E	1	Scroll position: [0..4]
98	Player[3].HeroOwned[8]	db	0033F	8	-1 if none, otherwise [Hero.ID]
99	Player[3].TavernHero[2]	db	00347	2	Left: TavernHero[0]; Right: TavernHero[1]
100	Player[3].Dummy[50]	db	00349	50	Always 0
101	Player[3].UA.Probability	db	0037B	1	Chances to find the exact location of UA in %
102	Player[3].UA.X	db	0037C	1	Ultimate Artifact X location, or estimate
103	Player[3].UA.Y	db	0037D	1	Ultimate Artifact Y location, or estimate
104	Player[3].DaysTillLose	db	0037E	1	-1 if Player 4 has at least 1 town
105	Player[3].Towns	db	0037F	1	# of Towns
106	Player[3].TownSelected	db	00380	1	-1 if none, otherwise [Town.ID]
107	Player[3].TownListScroll	db	00381	1	Scroll position: [0..4]
108	Player[3].TownOwned[36]	db	00382	36	-1 if none, otherwise [Town.ID]
109	Player[3].Resource[7]	dd	003A6	28	Wood, Mercury, Ore, Sulfur, Crystal, Gems, Gold
110	Player[3].Income[7]	dd	003C2	28	At the beginning of the day
111	Player[3].Dummy[2]	db	003DE	2	Always 0
113	Player[3].PuzzlePiece[6]	db	003E0	6	BitField[6][8]: puzzle pieces revealed
114	Map.Tile[72][72]	TTile(10)	003E6	51840	Array of TTile structures
115	Map.ObeliskCount	db	0CE66	1	# of obelisks
116	Game.Hero[36]	THero(182)	0CE67	6552	Array of THero structures
117	Game.HeroStatus[36]	db	0E7FF	36	-1: free hero; 40h: in tavern, o.w. [Owner.ID]
118	Game.Town[36]	TTown(55)	0E823	1980	Array of TTown structures
119	Game.TownOwned[36]	db	0EFDF	36	-1: neutral, otherwise [Owner.ID]
120	Game.TownBuild	dd	0F003	4	BitField[32]: bit 1 if something has been built
121	Game.MineInfoEx[36]	TMineInfoEx(7)	0F007	252	Array of TMineInfoEx structures
122	Game.ObjectOwned[36]	db	0F103	36	0: Dragon City; 1: Lighthouse; [2..35]: Mines
123	Game.ArtifactTable[37]	db	0F127	37	24h if artifact is present on Map, otherwise -1
124	Game.ShipInfo[32]	TShipInfo(8)	0F14C	256	Array of TShipInfo structures
125	Game.ShipID[32]	db	0F24C	32	-1 if none, otherwise [Ship.ID]

126	Game.ObeliskVisited[48]	db	0F26C	48	BitField[48][4]: 0000xxxxb; or(1, 2, 4, 8)
127	Game.UltimateArtifact.X	db	0F29C	1	X coordinate of UA
128	Game.UltimateArtifact.Y	db	0F29D	1	Y coordinate of UA
129	Game.UltimateArtifact.ID	db	0F29E	1	-1 if digged up, otherwise [UA.ID]
130	Map.TileExtraInfo[72][72]	db	0F29F	5184	Non-negative for some object tiles on Map, otherwise -1
131	Game.FogOfWar[72][72]	db	106DF	5184	BitField[72][72][8]: xxxxxxxxb
132	Game.ObjectVisitedByAI[72][72]	db	11B1F	5184	BitField[72][72][4]: 0000xxx0b; or(2, 4, 8)

TPlayer Player[4] | Offset: 0F2 | sizeof(TPlayer) = 189 bytes

#	Name	Field Type	Offset	Size	Comments
1	Name[17]	db	000	17	Null-terminated string, 16 characters
2	Color	db	011	1	0: Blue; 1: Green; 2: Red; 3: Yellow
3	SkillLevel	db	012	1	0: None; 1: Dumb; 2: Average; 3: Smart; 4: Genius
4	Heroes	db	013	1	# of Heroes
5	HeroSelected	db	014	1	-1 if none, otherwise [Hero.ID]
6	HeroListScroll	db	015	1	Scroll position: [0..4]
7	HeroOwned[8]	db	016	8	-1 if none, otherwise [Hero.ID]
8	TavernHero[2]	db	01E	2	Left: TavernHero[0]; Right: TavernHero[1]
9	Dummy[50]	db	020	50	Always 0
10	UA.Probability	db	052	1	Chances to find the exact location of UA in %
11	UA.X	db	053	1	Ultimate Artifact X location, or estimate
12	UA.Y	db	054	1	Ultimate Artifact Y location, or estimate
13	DaysTillLose	db	055	1	-1 if Player has at least 1 town
14	Towns	db	056	1	# of Towns
15	TownSelected	db	057	1	-1 if none, otherwise [Town.ID]
16	TownListScroll	db	058	1	Scroll position: [0..4]
17	TownOwned[36]	db	059	36	-1 if none, otherwise [Town.ID]
18	Resource[7]	dd	07D	28	Wood, Mercury, Ore, Sulfur, Crystal, Gems, Gold
19	Income[7]	dd	099	28	At the beginning of the day
20	Dummy[2]	dw	0B5	2	Always 0
21	PuzzlePiece[6]	db	0B7	6	BitField[6][8]: puzzle pieces revealed

THero Hero[36] | Offset: 0CE67 | sizeof(THero) = 182 bytes

#	Name	Field Type	Offset	Size	Comments
1	ID	db	000	1	[0..35]
2	Owner	db	001	1	0 if none, otherwise [Owner.ID]: [0..3]
3	Name[17]	db	002	17	Null-terminated string, 16 characters
4	ShortName[9]	db	013	9	Null-terminated string, 8 characters
5	Class	db	01C	1	0: Knight; 1: Barbarian; 2: Sorceress; 3: Warlock
6	PortraitID	db	01D	1	[0..35]
7	X	db	01E	1	X coordinate of a hero
8	Y	db	01F	1	Y coordinate of a hero
9	Dest.X	db	020	1	X coordinate of a destination tile; -1, if none
10	Dest.Y	db	021	1	Y coordinate of a destination tile; -1, if none
11	Direction	db	022	1	0..7: N, NE, E, SE, S, SW, W, NW
12	ObjectBeingVisited.ID	db	023	1	[ID] of the object being visited by hero
13	ObjectBeingVisited.ExtraInfo	db	024	1	[ExtraInfo] of the object being visited by hero
14	MaxMP	dw	025	2	Movement points (maximum)
15	MP	dw	027	2	Movement points (current)
16	Experience	dd	029	4	[0..2102396473] without bugs
17	Dummy[1]	db	02D	1	Always 0
18	Level	dw	02E	2	[1..75] without bugs
19	Attack	db	030	1	[0..127], otherwise negative (signed char)
20	Defense	db	031	1	[0..127], otherwise negative (signed char)
21	SpellPower	db	032	1	[0..127], otherwise negative (signed char)
22	Knowledge	db	033	1	[0..127], otherwise negative (signed char)
23	SiegeSkill	db	034	1	Always 1; unused
24	MoraleBonus	db	035	1	Oasis visited +1; Statue visited +2; etc.
25	LuckBonus	db	036	1	Faerie ring visited +1; Fountain visited +1; etc.
26	Dummy[2]	db	037	2	Always 0
27	GazeboVisited[4]	db	039	4	BitField[4][8]

28	RandomTreeNumber	dw	03D	2	A random number used by the leveling-up algorithm
29	Dummy[24]	db	03F	24	Always 0
30	Army[0..4].ID	db	057	5	[0: Peasant .. 27: Genie], otherwise -1
31	Army[0..4].N	dw	05C	10	[0..32767]
32	Magic[0..28].ID	db	066	29	[0: Fireball .. 28: Town Gate], otherwise -1
33	Magic[0..28].N	db	083	29	[0..127]
34	ArtifactOwned[14]	db	0A0	14	[0: Ultimate Book .. 37: Magic Book], otherwise -1
35	StatusFlags	dd	0AE	4	BitField[8]: 0..0xxxxxxx; e.g. 80h, if on board
36	AI	float	0B2	4	Used by AI; 0.0 for human players

TTown Town[36] | Offset: 0E823 | sizeof(TTown) = 55 bytes

#	Name	Field Type	Offset	Size	Comments
1	ID	db	000	1	[0..35]
2	Owner	db	001	1	-1 if none, otherwise [Owner.ID]
3	NameID	db	002	1	[0: Blackridge .. 35: Erliquin]
4	Class	db	003	1	0: Knight; 1: Sorceress; 2: Barbarian; 3: Warlock
5	X	db	004	1	0 if absent, otherwise X coordinate of Town
6	Y	db	005	1	0 if absent, otherwise Y coordinate of Town
7	Army[0..4].ID	db	006	5	[0: Peasant .. 27: Genie], otherwise -1
8	Army[0..4].N	dw	00B	10	[0..32767]
9	VisitingHeroID	db	015	1	-1 if none, otherwise [Hero.ID]
10	Buildings	dw	016	2	BitField[13]: 000xxxxxxxxxxxxxb
11	MageGuildLevel	db	018	1	0; 0: Level 1; 1: Level 2; 2: Level 3; 3: Level 4
12	Dummy[1]	db	019	1	Always 0
13	DwellingPopulation[6]	dw	01A	12	[0..32767]
14	ObjInfoIndex	db	026	1	Index of Town's record in Map.ObjInfo array
15	InitFlag	db	027	1	1 if Town properties were edited, otherwise 0
16	Dummy[4]	db	028	4	Always 0
20	Level1Spell[3]	db	02C	3	Level 1 spells in Mage Guild
21	Level2Spell[2]	db	02F	2	Level 2 spells in Mage Guild
22	Level3Spell[2]	db	031	2	Level 3 spells in Mage Guild
23	Level4Spell[2]	db	033	2	Level 4 spells in Mage Guild
24	DevelopmentFactor	dw	035	2	Neutral: 0; Random: 2; Edited: 10; +1/day

TMineInfoEx MineInfoEx[36] Offset: 0F007 sizeof(TMineInfoEx) = 7 bytes					
#	Name	Field Type	Offset	Size	Comments
1	ID	db	000	1	[0..35]
2	Owner	db	001	1	-1 if none, otherwise [Owner.ID]
3	Type	db	002	1	0..6: Sawmill .. Gold Mine, 22: Dragon City, 23: Lighthouse
4	Dummy[2]	db	003	2	Always 0
5	X	db	005	1	-1 if absent, otherwise X coordinate of Mine
6	Y	db	006	1	-1 if absent, otherwise Y coordinate of Mine

TShipInfo ShipInfo[32] Offset: 0F007 sizeof(TShipInfo) = 8 bytes					
#	Name	Field Type	Offset	Size	Comments
1	ID	db	000	1	[0..31]
2	X	db	001	1	-1 if absent, otherwise X coordinate of Ship
3	Y	db	002	1	-1 if absent, otherwise Y coordinate of Ship
4	Direction	db	003	1	Direction when empty; 0..7: N, NE, E, SE, S, SW, W, NW
5	ObjectID	db	004	1	0BDh (3Dh or 80h: Hero, interactive)
6	HeroAboardID	db	005	1	ID of Hero aboard
7	LastHeroAboardID	db	006	1	Last [Hero.ID] aboard; bit 7 set if empty
8	Owner	db	007	1	-1 if none, otherwise [Owner.ID]

Heroes of Might and Magic Map File Format (*.MAP, *.CMP)

#	Name	Field Type	Offset	Size	Comments
1	Map.HeaderInfo	dw	00000	2	1000 (3E8h) if there are fields 1-5
2	Map.Difficulty	db	00002	1	0: Easy; 1: Normal; 2: Tough; 3: Impossible
3	Map.Size	db	00003	1	0: Small; 1: Medium; 2: Large
4	Map.Header	THeader	00004	1358	Map name and description in 8 languages
5	Map.Version	dw	00552	2	1000 (3E8h) for Windows; 0 for DOS
6	Map.EditorVersion	dw	00554	2	Editor version
7	Map.Width	dw	00556	2	Map width in tiles, can be 72 (48h) only
8	Map.Height	dw	00558	2	Map height in tiles, can be 72 (48h) only
9	Map.Tile[72][72]	TTile(10)	0055A	51840	Array of TTile structures
10	Map.TownInfo[36]	TTownInfo(3)	0CFDA	108	Array of TTownInfo structures
11	Map.MineInfo[36]	TMineInfo(3)	0D046	108	Array of TMineInfo structures
12	Map.ArtifactTable[37]	db	0D0B2	37	24h if artifact is present on Map, otherwise -1
13	Map.ObeliskCount	db	0D0D7	1	# of obelisks; 1 if there are not any
14	Map.TileExtraInfo[72][72]	db	0D0D8	5184	Non-negative for some object tiles on Map, otherwise -1
15	Map.PresetObjN	dd	0E518	4	Present only if Map.EditorVersion >= 1112 (458h)
16	Map.ObjInfo	TObjInfo	0E51C	Variable	Info about heroes and towns (TTownObjInfo and THeroObjInfo)
17	Map.EraserInfo[72][72]	TEraserInfo(4)	Variable	20736	Extra info to support Eraser Mode functionality
18	Map.EraserTail	dw	Variable	2	Extra info to support Eraser Mode functionality

TTile Tile[72][72] Offset: 0055A sizeof(TTile) = 10 bytes					
#	Name	Field Type	Offset	Size	Comments
1	Layer[0].FrameID	db	000	1	Terrain ID
2	Layer[1].ResID	db	001	1	Layer 1 ICN ID
3	Layer[1].FrameID	db	002	1	Layer 1 Frame ID within ICN
4	Layer[2].ResID	db	003	1	Layer 2 ICN ID
5	Layer[2].FrameID	db	004	1	Layer 2 Frame ID within ICN
6	FlagsExtraInfo	db	005	1	Extra info for some Flags, otherwise 0
7	Flags	db	006	1	BitField[8]: tile mirrors, decorations, etc.
8	ForegroundObjID	db	007	1	ID and flags of an overlapping object, otherwise 0
9	ObjectID	db	008	1	Object ID and flags; bit 7: interactive tile
10	PackedObjectInfo	db	009	1	Info about an object (e.g. loyalty and number)

TTownInfo TownInfo[36] Offset: 0CFDA sizeof(TTownInfo) = 3 bytes					
#	Name	Field Type	Offset	Size	Comments
1	X	db	00	1	X coordinate of Town
2	Y	db	01	1	Y coordinate of Town
3	Class	db	02	1	0: Knight; 1: Sorceress; 2: Barbarian; 3: Warlock; 4: Random

TMineInfo MineInfo[36] Offset: 0D046 sizeof(TMineInfo) = 3 bytes					
#	Name	Field Type	Offset	Size	Comments
1	X	db	00	1	X coordinate of Mine
2	Y	db	01	1	Y coordinate of Mine
3	Type	db	02	1	0..6: Sawmill .. Gold Mine, 22: Dragon City, 23: Lighthouse

TObjInfo: TTownObjInfo[] | Offset: 0E51C | sizeof(TTownObjInfo) = 74 bytes

#	Name	Field Type	Offset	Size	Comments
1	Type	dd	000	4	Always 46h
2	InitFlag	db	004	1	1 if Town properties were edited, otherwise 0
3	Owner	db	005	1	-1 if none, otherwise [Owner.ID]
4	Buildings	dw	006	2	BitField: 000xxxxx00xxxxxb
5	MageGuildLevel	db	008	1	0; 0: Level 1; 1: Level 2; 2: Level 3; 3: Level 4
6	Garrison	TAry(15)	009	15	Army[0..4].ID and Army[0..4].N
7	Dummy[50]	db	018	50	Always 0

TObjInfo: THeroObjInfo[] | Offset: 0E51C | sizeof(THeroObjInfo) = 76 bytes

#	Name	Field Type	Offset	Size	Comments
1	Type	dd	000	4	Always 4Bh
2	Owner	db	004	1	[0..3]
3	Army	TAry(15)	005	15	Army[0..4].ID and Army[0..4].N
4	ID	db	014	1	[0..35]
5	StartArtifact[4]	db	015	1	[-1..37]
6	Experience	dd	016	4	[0..2102396473] without bugs
7	Dummy[50]	db	01A	50	Always 0

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For more information visit <http://handbookhmm.ru/forum/>