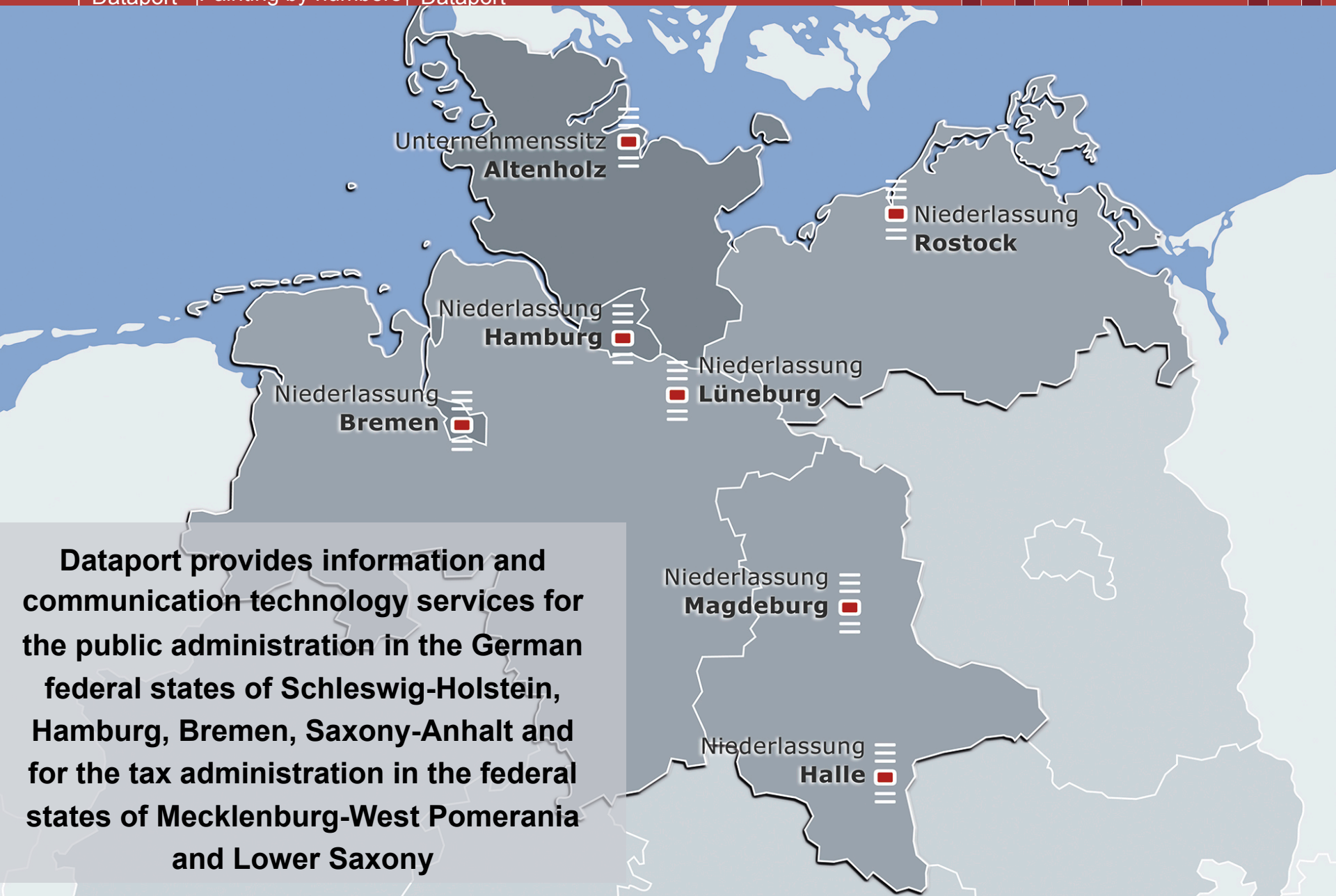


Painting by Numbers:

Visualisation of structured IPv6-Addressing

Helge.Holz@dataport.de





Dataport provides information and communication technology services for the public administration in the German federal states of Schleswig-Holstein, Hamburg, Bremen, Saxony-Anhalt and for the tax administration in the federal states of Mecklenburg-West Pomerania and Lower Saxony



IPv6 Address-Planning

- End of 2009: Germany received a `::/26` block of IPv6-Addresses for de.government
- 2010: IPv6-Working-group at the Ministry of the Interior in order to encourage the national states to use IPv6
- Each national state (such as Bavaria) gets a `::/32`
- Requirement: structured Address-Template



IPv6 Addressing for Schleswig-Holstein

- Creation of an IPv6-Address-Blueprint
- Should be template for the other states
- Explanation necessary



Structuring of 2001:0DB8::/32

Break down into ::/36 nets: One-dimensional Tree

2001:0DB8:0000::/34

2001:0DB8:4000::/34

2001:0DB8:4000::/36

2001:0DB8:5000::/36

2001:0DB8:6000::/36

2001:0DB8:7000::/36

2001:0DB8:8000::/34

2001:0DB8:8000::/36

2001:0DB8:9000::/36

2001:0DB8:A000::/36

2001:0DB8:B000::/36

2001:0DB8:C000::/34

2001:0DB8:C000::/35

2001:0DB8:E000::/35



Binary presentation of the relevant bits

**two-dimensional
arrangement of the first
two bits**

00	01
10	11



Iteration

00	01
10	11

00	01	00	01
10	11	10	11
00	01	00	01
10	11	10	11



Iteration

two-dimensional arrangement of the first 4 bits

00	01
10	11

0000	0001	0100	0101
0010	0011	0110	0111
1000	1001	1100	1101
1010	1011	1110	1111



Hexadecimal presentation of the relevant bits

two-dimensional arrangement of the first 4 bits

Binary:

0000	0001	0100	0101
0010	0011	0110	0111
1000	1001	1100	1101
1010	1011	1110	1111

Hexadecimal:

0	1	4	5
2	3	6	7
8	9	C	D
A	B	E	F



Iteration to 8 bits

0	1	4	5
2	3	6	7
8	9	C	D
A	B	E	F

80	81	84	85
82	83	86	87
88	89	8C	8D
8A	8B	8E	8F



Matrix visualising aggregatable IPv6-Ranges (8 Bit)

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	C0	C1	C4	C5	D0	D1	D4	D5
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF



Matrix visualising aggregatable IPv6-Ranges (8 Bit)

Coloured squares as examples for different network sizes

2001:0DB8:1600::/40	violet	-----
2001:0DB8:0600::/39	orange	
2001:0DB8:2000::/38	dark-green	—————
2001:0DB8:3800::/37	light-green	
2001:0DB8:8000::/36	red	—————
2001:0DB8:4000::/35	yellow	
2001:0DB8:C000::/34	blue	—————
2001:0DB8:8000::/33	lower half	
2001:0DB8:0000::/32	whole adress-space	



Matrix visualising aggregatable IPv6-Ranges (8 Bit)

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	C0	C1	C4	C5	D0	D1	D4	D5
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF



Matrix visualising aggregatable IPv4-Ranges (8 Bit)

0	1	4	5	16	17	20	21	64	65	68	69	80	81	84	85
2	3	6	7	18	19	22	23	66	67	70	71	82	83	86	87
8	9	12	13	24	25	28	29	72	73	76	77	88	89	92	93
10	11	14	15	26	27	30	31	74	75	78	79	90	91	94	95
32	33	36	37	48	49	52	53	96	97	100	101	112	113	116	117
34	35	38	39	50	51	54	55	98	99	102	103	114	115	118	119
40	41	44	45	56	57	60	61	104	105	108	109	120	121	124	125
42	43	46	47	58	59	62	63	106	107	110	111	122	123	126	127
128	129	132	133	144	145	148	149	192	193	196	197	208	209	212	213
130	131	134	135	146	147	150	151	194	195	198	199	210	211	214	215
136	137	140	141	152	153	156	157	200	201	204	205	216	217	220	221
138	139	142	143	154	155	158	159	202	203	206	208	218	219	222	223
160	161	164	165	176	177	180	181	224	225	228	229	240	241	244	245
162	163	166	167	178	179	182	183	226	227	230	231	242	243	246	247
168	169	172	173	184	185	188	189	232	233	236	237	248	249	252	253
170	171	174	175	186	187	190	191	234	235	238	239	250	251	254	255



Matrix visualising aggregatable IPv4-Ranges (8 Bit)

Coloured squares as examples for different network sizes

172.16.22.0/24 or 10.22.0.0/16
172.16.6.0/23 or 10.6.0.0/15
172.16.32.0/22 or 10.32.0.0/14
172.16.56.0/21 or 10.56.0.0/13
172.16.128.0/20 or 10.128.0.0/12
172.16.64.0/19 or 10.64.0.0/11
172.16.192.0/18 or 10.192.0.0/10
172.16.128.0/17 or 10.128.0.0/9
172.16.0.0/16 or 10.0.0.0/8

violet

orange

dark-green

—————

light-green

red

—————

yellow

blue

—————

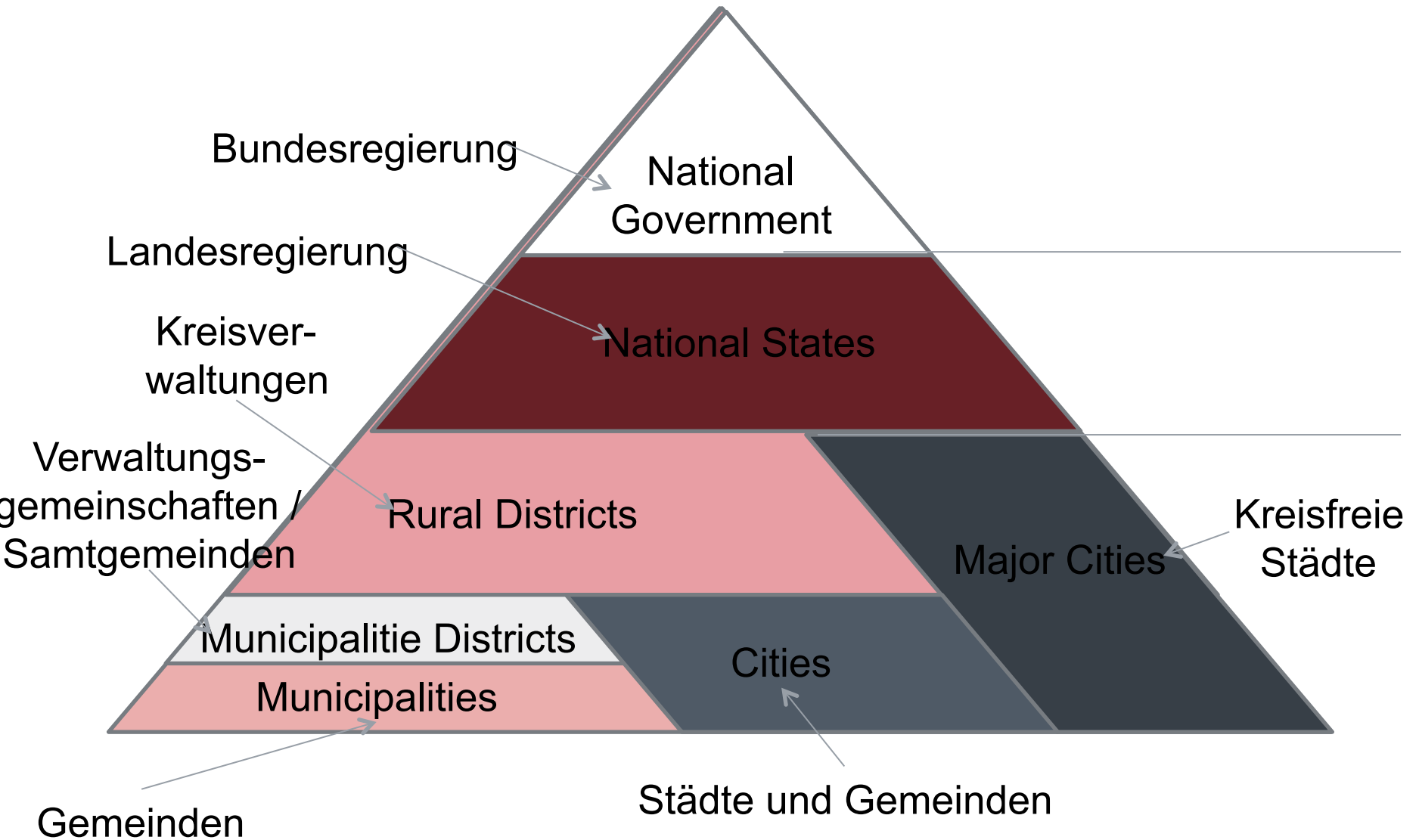
lower half

whole adress-space



„Three-Dimensional Tree“





RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	C0	C1	C4	C5	D0	D1	D4	D5
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:32 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

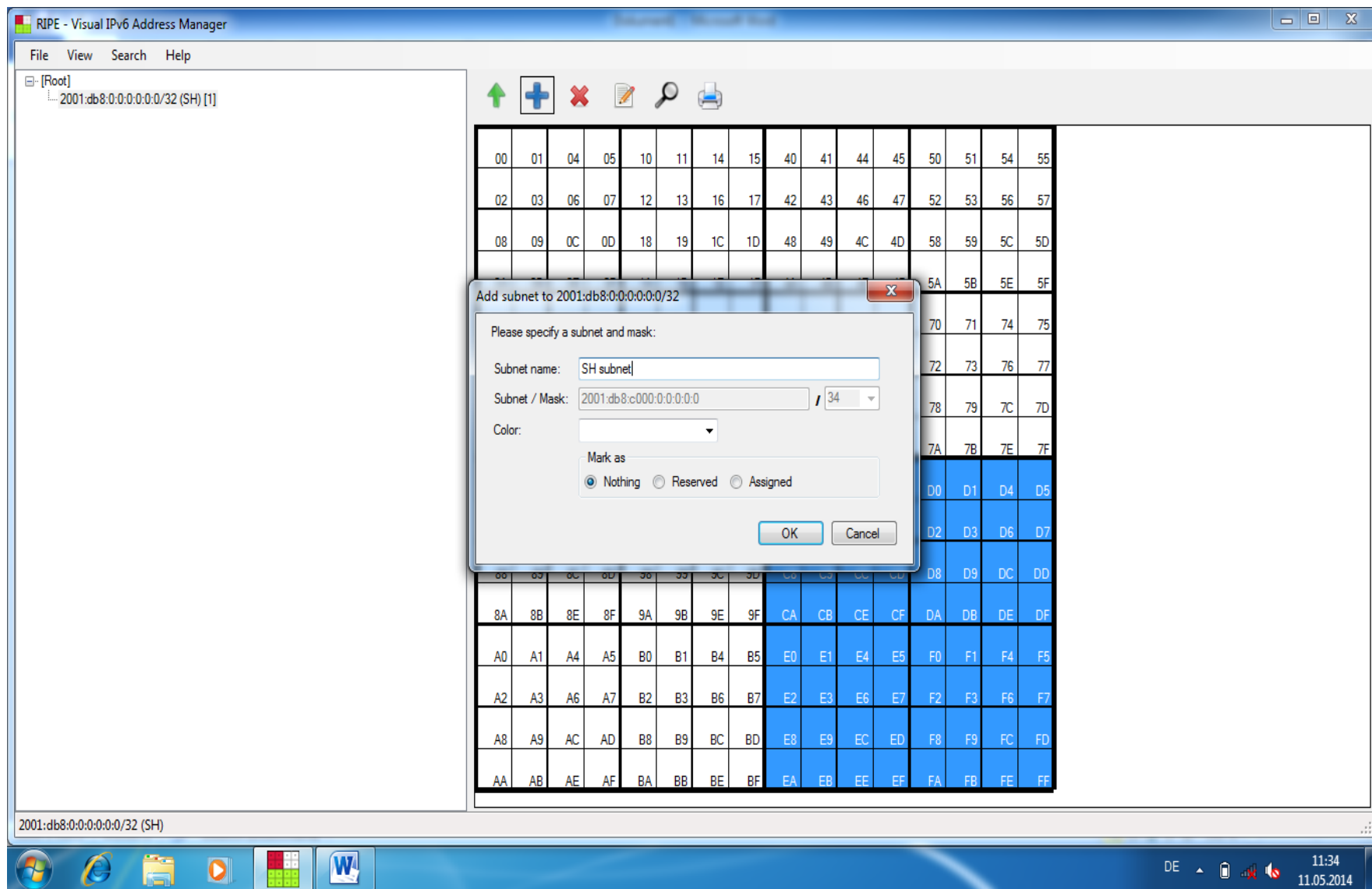
[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]

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00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	C0	C1	C4	C5	D0	D1	D4	D5
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:33 11.05.2014



RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
												5A	5B	5E	5F
												70	71	74	75
												72	73	76	77
												78	79	7C	7D
												7A	7B	7E	7F
												D0	D1	D4	D5
												D2	D3	D6	D7
												D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

Add subnet to 2001:db8:0:0:0:0:0:0/32

Please specify a subnet and mask:

Subnet name: SH Police

Subnet / Mask: 2001:db8:c000:0:0:0:0:0 / 34

Color: Blue

Mark as:
☒ Nothing ☐ Reserved ☐ Assigned

OK Cancel

2001:db8:0:0:0:0:0:0 (SH)

11:35 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SH Police) [2]

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	SH Police 2001:db8:c000:0:0:0:0:0/34							
82	83	86	87	92	93	96	97								
88	89	8C	8D	98	99	9C	9D								
8A	8B	8E	8F	9A	9B	9E	9F								
A0	A1	A4	A5	B0	B1	B4	B5								
A2	A3	A6	A7	B2	B3	B6	B7								
A8	A9	AC	AD	B8	B9	BC	BD								
AA	AB	AE	AF	BA	BB	BE	BF								
C0	C1	C4	C5	D0	D1	D4	D5								
C2	C3	C6	C7	D2	D3	D6	D7								
C8	C9	CC	CD	D8	D9	DC	DD								
CA	CB	CE	CF	DA	DB	DE	DF								
E0	E1	E4	E5	F0	F1	F4	F5								
E2	E3	E6	E7	F2	F3	F6	F7								
E8	E9	EC	ED	F8	F9	FC	FD								
EA	EB	EE	EF	FA	FB	FE	FF								

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:36 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SH Police) [2]

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	SH Police 2001:db8:c000:0:0:0:0:0/34							
82	83	86	87	92	93	96	97								
88	89	8C	8D	98	99	9C	9D								
8A	8B	8E	8F	9A	9B	9E	9F								
A0	A1	A4	A5	B0	B1	B4	B5								
A2	A3	A6	A7	B2	B3	B6	B7								
A8	A9	AC	AD	B8	B9	BC	BD								
AA	AB	AE	AF	BA	BB	BE	BF								
C0	C1	C4	C5	D0	D1	D4	D5	SH Police 2001:db8:c000:0:0:0:0:0/34							
C2	C3	C6	C7	D2	D3	D6	D7								
C8	C9	CC	CD	D8	D9	DC	DD								
CA	CB	CE	CF	DA	DB	DE	DF								
E0	E1	E4	E5	F0	F1	F4	F5								
E2	E3	E6	E7	F2	F3	F6	F7								
E8	E9	EC	ED	F8	F9	FC	FD								
EA	EB	EE	EF	FA	FB	FE	FF								

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:37 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SH Police) [2]

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
												5A	5B	5E	5F
												70	71	74	75
												72	73	76	77
												78	79	7C	7D
												7A	7B	7E	7F
												D0	D1	D4	D5
												D2	D3	D6	D7
												D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

Add subnet to 2001:db8:0:0:0:0:0:0/32

Please specify a subnet and mask:

Subnet name: SH Rural

Subnet / Mask: 2001:db8:4000:0:0:0:0:0 / 36

Color: ForestGreen

Mark as
☐ Nothing ☒ Reserved ☐ Assigned

OK Cancel

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:38 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SH Police) [2]
2001:db8:4000:0:0:0:0:0/36 (SH Rural) [3] (res.)

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	SH Rural 2001:db8:4000:0:0:0:0:0/36				50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	SH Police 2001:db8:c000:0:0:0:0:0/34				00	01	04	05
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

2001:db8:0:0:0:0:0:0/32 (SH)

11:39 11.05.2014

RIPE - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SH Police) [2]
2001:db8:4000:0:0:0:0:0/36 (SH Rural) [3] (res.)

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	20	21	24	25	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
												5A	5B	5E	5F
												70	71	74	75
												72	73	76	77
												78	79	7C	7D
												7A	7B	7E	7F
												D0	D1	D4	D5
												D2	D3	D6	D7
												D8	D9	DC	DD
												CA	CB	CE	CF
8A	8B	8E	8F	9A	9B	9E	9F	E0	E1	E4	E5	FA	FB	FE	FF
A0	A1	A4	A5	B0	B1	B4	B5	E2	E3	E6	E7	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E8	E9	EC	ED	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

Add subnet to 2001:db8:4000:0:0:0:0:0/36

Please specify a subnet and mask:

Subnet name: SH Rural Segeberg

Subnet / Mask: 2001:db8:4200:0:0:0:0:0 / 40

Color: Firebrick

Mark as:
☒ Nothing ☐ Reserved ☐ Assigned

OK Cancel

2001:db8:0:0:0:0:0:0/32 (SH)

DE 11:41 11.05.2014

RIPE2 - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SHPolice) [2]
2001:db8:4000:0:0:0:0:0/36 (SH Rural) [3] (res.)
2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg) [4] (ass.)

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22												66	67	72	73
28												6C	6D	78	79
2A												6E	6F	7A	7B
80												C4	C5	D0	D1
82												C6	C7	D2	D3
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

No valid subnet

The selected area is not a valid subnet.

OK

2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg)

DE 11:59 11.05.2014

RIPE2 - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SHPolice) [2]
2001:db8:4000:0:0:0:0:0/36 (SH Rural) [3] (res.)
2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg) [4] (ass.)

↑ + × ✎ 🔍 🖨

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0E	0F	12	13	1E	1F	20	21	4A	4B	4E	4F	5A	5B	5E	5F
22	23	26	27	2A	2B	2E	2F	50	51	54	55	70	71	74	75
28	29	2C	2D	30	31	34	35	52	53	56	57	72	73	76	77
38	39	3C	3D	40	41	44	45	58	59	5C	5D	78	79	7C	7D
3E	3F	42	43	46	47	4A	4B	5A	5B	5E	5F	7E	7F		
48	49	4C	4D	50	51	54	55	D0	D1	D4	D5				
4E	4F	52	53	56	57			D2	D3	D6	D7				
58	59	5C	5D					D8	D9	DC	DD				
5E	5F														
60	61	64	65	68	69	6C	6D	8A	8B	8E	8F	9A	9B	9E	9F
62	63	66	67	6A	6B	6E	6F	CA	CB	CE	CF	DA	DB	DE	DF
68	69	6C	6D	70	71	74	75	A0	A1	A4	A5	B0	B1	B4	B5
6E	6F	72	73	76	77			A2	A3	A6	A7	B2	B3	B6	B7
78	79	7C	7D					A8	A9	AC	AD	B8	B9	BC	BD
7E	7F							AA	AB	AE	AF	BA	BB	BE	BF
								EA	EB	EE	EF	FA	FB	FE	FF

Add subnet to 2001:db8:4200:0:0:0:0:0/40

Please specify a subnet and mask:

Subnet name: SH Rural Segeberg Wahlstedt

Subnet / Mask: 2001:db8:4200:0:0:0:0:0 / 44

Color: Coral

Mark as
☐ Nothing ☐ Reserved ☒ Assigned

OK Cancel

2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg)

DE 12:00 11.05.2014

RIPE2 - Visual IPv6 Address Manager

File View Search Help

[Root]
2001:db8:0:0:0:0:0:0/32 (SH) [1]
2001:db8:c000:0:0:0:0:0/34 (SHPolice) [2]
2001:db8:4000:0:0:0:0:0/36 (SH Rural) [3] (res.)
2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg) [4] (ass.)
2001:db8:4200:0:0:0:0:0/44 (SH Rural Segeberg Wahlstedt) [5] (ass.)

SH Rural Segeberg Wahlstedt

00	01	02	03	04	05	10	11	12	13	14	15	40	41	42	43	44	45	50	51	52	53	54	55
06	07	08	09	0A	0B	16	17	18	19	1A	1B	46	47	48	49	4A	4B	56	57	58	59	5A	5B
0C	0D	0E	0F	1C	1D	1E	1F	1D	1E	1F	1A	4C	4D	4E	4F	4A	4B	5C	5D	5E	5F	5A	5B
20	21	22	23	24	25	30	31	32	33	34	35	60	61	62	63	64	65	70	71	72	73	74	75
26	27	28	29	2A	2B	36	37	38	39	3A	3B	66	67	68	69	6A	6B	76	77	78	79	7A	7B
2C	2D	2E	2F	2A	2B	3C	3D	3E	3F	3A	3B	6C	6D	6E	6F	6A	6B	7C	7D	7E	7F	7A	7B
80	81	82	83	84	85	90	91	92	93	94	95	C0	C1	C2	C3	C4	C5	D0	D1	D2	D3	D4	D5
86	87	88	89	8A	8B	96	97	98	99	9A	9B	C6	C7	C8	C9	CA	CB	D6	D7	DA	DB	DC	DD
8C	8D	8E	8F	8A	8B	9C	9D	9E	9F	9A	9B	CE	CF	CA	CB	CC	CD	DE	DF	DA	DB	DC	DD
A0	A1	A2	A3	A4	A5	B0	B1	B2	B3	B4	B5	E0	E1	E2	E3	E4	E5	F0	F1	F2	F3	F4	F5
A6	A7	A8	A9	AC	AD	B6	B7	B8	B9	BA	BB	E6	E7	E8	E9	EA	EB	FE	FF	FA	FB	FC	FD
AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF	FA	FB	FC	FD	FE	FF	FA	FB	FC	FD

2001:db8:4200:0:0:0:0:0/40 (SH Rural Segeberg)

DE 12:00 11.05.2014

IPV6-Adressrahmenkonzept_SH [Kompatibilitätsmodus] - Microsoft Word

Tabellentools

Datei Start Einfügen Seitenlayout Verweise Sendungen Überprüfen Ansicht Entwurf Layout

Einfügen Ausschneiden Kopieren Format übertragen Zwischenablage

Schriftart

Absatz

Formatvorlagen

Suchen Ersetzen Markieren Bearbeiten

00	01	04	05	10	11	14	15	40	41	44	45	50	51	54	55
02	03	06	07	12	13	16	17	42	43	46	47	52	53	56	57
08	09	0C	0D	18	19	1C	1D	48	49	4C	4D	58	59	5C	5D
0A	0B	0E	0F	1A	1B	1E	1F	4A	4B	4E	4F	5A	5B	5E	5F
20	21	24	25	30	31	34	35	60	61	64	65	70	71	74	75
22	23	26	27	32	33	36	37	62	63	66	67	72	73	76	77
28	29	2C	2D	38	39	3C	3D	68	69	6C	6D	78	79	7C	7D
2A	2B	2E	2F	3A	3B	3E	3F	6A	6B	6E	6F	7A	7B	7E	7F
80	81	84	85	90	91	94	95	C0	C1	C4	C5	D0	D1	D4	D5
82	83	86	87	92	93	96	97	C2	C3	C6	C7	D2	D3	D6	D7
88	89	8C	8D	98	99	9C	9D	C8	C9	CC	CD	D8	D9	DC	DD
8A	8B	8E	8F	9A	9B	9E	9F	CA	CB	CE	CF	DA	DB	DE	DF
A0	A1	A4	A5	B0	B1	B4	B5	E0	E1	E4	E5	F0	F1	F4	F5
A2	A3	A6	A7	B2	B3	B6	B7	E2	E3	E6	E7	F2	F3	F6	F7
A8	A9	AC	AD	B8	B9	BC	BD	E8	E9	EC	ED	F8	F9	FC	FD
AA	AB	AE	AF	BA	BB	BE	BF	EA	EB	EE	EF	FA	FB	FE	FF

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