

Kerberos Netzverkehr

- Client 10.5.12.12
- Kerberos 10.5.3.1
- Webserver 10.5.2.2

Krb-contrained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN, ACK] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 Win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 Win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1873 Win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.1? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.1? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	
15	6.906734	10.5.3.1	10.5.12.12	KRB5	
16	6.909274	10.5.12.12	10.5.3.1	KRB5	
17	6.950124	10.5.3.1	10.5.12.12	KRB5	
18	6.955242	10.5.12.12	10.5.2.2	TCP	

Frame 7 (275 bytes on wire, 275 bytes captured)

Ethernet II, Src: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c), Dst: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c)

Internet Protocol, Src: 10.5.12.12 (10.5.12.12), Dst: 10.5.2.2 (10.5.2.2)

Transmission Control Protocol, Src Port: dmidi (1199), Dst Port: http (80)

Hypertext Transfer Protocol

GET /1.asp HTTP/1.1\r\n

Accept: */*\r\n

Accept-Language: en-us\r\n

Accept-Encoding: gzip, deflate\r\n

User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.1.4322)\r\n

Host: upwin2003\r\n

Connection: Keep-Alive\r\n

\r\n

00d0 56 31 3b 20 2e 4e 45 54 20 43 4c 52 20 31 2e 31 V1; .NET CLR 1.1

00e0 2e 34 33 32 32 29 0d 0a 48 6f 73 74 3a 20 75 70 .4322).. Host: up

00f0 77 69 6e 32 30 30 33 0d 0a 43 6f 6e 6e 65 63 74 win2003.. Connect

0100 69 6f 6e 3a 20 4b 65 65 70 2d 41 6c 69 76 65 0d ion: Kee p-Alive.

HTTP Host (http.host), 17 bytes Packets: 68 Displayed: 68 Marked: 1 Profile: Default

1. HTTP Verbindungs-aufbau von Client (10.5.12.12) zu Server upwin2003 (10.5.2.2)
2. Abfrage der Webserver Startseite

Krb-contrained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 Win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 Win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831732	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1673 Win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.1? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.1? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	
16	6.909274	10.5.12.12	10.5.3.1	KRB5	
17	6.950124	10.5.3.1	10.5.12.12	KRB5	
18	6.955242	10.5.12.12	10.5.2.2	TCP	

Webserver verweigert Webseite!
Client nicht autorisiert!

```
<STYLE type= text/css >\r\n
BODY { font: 8pt/12pt verdana }\r\n
H1 { font: 13pt/15pt verdana }\r\n
H2 { font: 8pt/12pt verdana }\r\n
A:link { color: red }\r\n
A:visited { color: maroon }\r\n
</STYLE>\r\n
</HEAD><BODY><TABLE width=500 border=0 cellpadding=10><TR><TD>\r\n
\r\n
<h1>You are not authorized to view this page</h1>\r\n
\r\n
You do not have permission to view this directory or page using the credentials that you supplied because your Web browser
<hr>\r\n
<p>Please try the following:</p>\r\n
<ul>\r\n
<li>Contact the web site administrator if you believe you should be able to view this directory or page.</li>\r\n
<li>Click the <a href="javascript:location.reload()">Refresh</a> button to try again with different credentials.</li>\r\n
</ul>\r\n
<h2>HTTP Error 401.2 - Unauthorized: Access is denied due to server configuration.<br>Internet Information Services (IIS)</h2>
```

02c0 3c 54 44 3e 0d 0a 0d 0a 3c 68 31 3e 59 6f 75 20 <TD>.... <h1>You
02d0 61 72 65 20 6e 6f 74 20 61 75 74 68 6f 72 69 7a are not authoriz

Frame (466 bytes) Reassembled TCP (1872 bytes)

Text item (), 51 bytes Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Krb-contained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN, ACK] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 Win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 Win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1073 Win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.885437	Microsof_a8:ab:0c	Broadcast	ARP	Who has 10.5.3.1? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	AS-REP
16	6.909274	10.5.12.12	10.5.3.1	KRB5	TGS-REQ
17	6.950124	10.5.3.1	10.5.12.12	KRB5	
18	6.955242	10.5.12.12	10.5.2.2	TCP	

Client kontaktiert Kerberos Authentication Server (10.5.3.1)

Frame 11 (351 bytes on wire, 351 bytes captured)

Ethernet II, Src: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c), Dst: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c)

Internet Protocol, Src: 10.5.12.12 (10.5.12.12), Dst: 10.5.3.1 (10.5.3.1)

User Datagram Protocol, Src Port: scol (1200), Dst Port: kerberos (88)

Kerberos AS-REQ

- Pvno: 5
- MSG Type: AS-REQ (10)
- padata: PA-ENC-TIMESTAMP PA-PAC-REQUEST
- KDC_REQ_BODY
 - Padding: 0
 - KDCOptions: 40810010 (Forwardable, Renewable, Canonicalize, Renewable OK)
 - Client Name (Principal): Administrator
 - Realm: DENYDC.COM
 - Server Name (Service and Instance): krbtgt/DENYDC.COM
 - till: 2037-09-13 02:48:05 (UTC)
 - rtime: 2037-09-13 02:48:05 (UTC)
 - Nonce: 2065316899
 - Encryption Types: rc4-hmac rc4-hmac-old rc4-md4 des-cbc-md5 des-cbc-crc rc4-hmac-exp rc4-hmac-old-exp
 - HostAddresses: YP1<20>

00a0 30 81 bc a0 07 03 05 00 40 81 00 10 a1 1a 30 18 0.....@.....0.

00b0 a0 03 02 01 01 a1 11 30 0f 1b 0d 41 64 6d 69 6e0...Admin

00c0 69 73 74 72 61 74 6f 72 a2 0c 1b 0a 44 45 4e 59 istrator...DENY

00d0 44 43 2e 43 4f 4d a3 1f 30 1d a0 03 02 01 02 a1 DC.COM..0.....

The name part of the client pri... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Krb-contrained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1873 win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.12.12? Tell 10.5.3.1
14	6.903588	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	AS-REP
16	6.909274	10.5.12.12	10.5.3.1	KRB5	TGS-REQ
17	6.950124	10.5.3.1	10.5.12.12	KRB5	TGS-REP
18	6.955242	10.5.12.12	10.5.2.2	TCP	[TCP segment of a reassembled PDU]

Frame 15 (1377 bytes on wire, 1377 bytes captured)

- Ethernet II, Src: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c), Dst: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c)
- Internet Protocol, Src: 10.5.3.1 (10.5.3.1), Dst: 10.5.12.12 (10.5.12.12)
- User Datagram Protocol, Src Port: kerberos (88), Dst Port: scol (1200)
- Kerberos AS-REP
 - Pvno: 5
 - MSG Type: AS-REP (11)
 - Client Realm: DENYDC.COM
 - Client Name (Principal): Administrator
 - Ticket
 - Tkt-vno: 5
 - Realm: DENYDC.COM
 - Server Name (Service and Instance): krbtgt/DENYDC.COM
 - enc-part rc4-hmac
 - enc-part rc4-hmac

0040 44 45 4e 59 44 43 2e 43 4f 4d a4 1a 30 18 a0 03 DENYDC.COM..0...

0050 02 01 01 a1 11 30 0f 1b 0d 41 64 6d 69 6e 69 730...Adminis

0060 74 72 61 74 6f 72 a5 82 03 c6 61 82 03 c2 30 82 trator...a...0.

0070 03 be a0 03 02 01 05 a1 0c 1b 0a 44 45 4e 59 44DENYD

The name part of the client pri... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Authentication Server schickt Ticket Granting Ticket an Client

Krb-contrained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1873 win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.12.12? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	AS-REP
16	6.909274	10.5.12.12	10.5.3.1	KRB5	TGS-REQ
17	6.930124	10.5.3.1	10.5.12.12	KRB5	TGS-REP
18	6.955242	10.5.12.12	10.5.2.2	TCP	[TCP segment of a reassembled PDU]

Frame 16 (1357 bytes on wire, 1357 bytes captured)

Ethernet II, Src: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c), Dst: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c)

Internet Protocol, Src: 10.5.12.12 (10.5.12.12), Dst: 10.5.3.1 (10.5.3.1)

User Datagram Protocol, Src Port: nucleus-sand (1201), Dst Port: kerberos (88)

Kerberos TGS-REQ

Pvno: 5

MSG Type: TGS-REQ (12)

padata: PA-TGS-REQ

KDC_REQ_BODY

Padding: 0

KDCOptions: 40800000 (Forwardable, Renewable)

Realm: DENYDC.COM

Server Name (Service and Instance): HTTP/upwin2003.denyDC.com

Client: 2037091502.48.05 (01C)

Nonce: 2066706949

Encryption Types: rc4-hmac rc4-hmac-old rc4-md4 des-cbc-md5 des-cbc-crc rc4-hmac-exp rc4-hmac-old-exp

04e0 a2 0c 1b 0a 44 45 4e 59 44 43 2e 43 4f 4d a3 27 ...DENY DC.COM.
04f0 30 25 a0 03 02 01 02 a1 1e 30 1c 1b 04 48 54 54 0%.....0...HTT
0500 50 1b 14 75 70 77 69 6e 32 30 30 33 2e 64 65 6e P..upwin 2003.den
0510 79 44 43 2e 63 6f 6d a5 11 18 0f 32 30 33 37 30 yDC.com. ...20370

This is the name part server's ... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

1. Client wendet sich mit Ticket Granting Ticket an Ticket Granting Server (auch 10.5.3.1).

2. Ticket Anfrage für upwin2003

Krb-contrained-delegation.cap - Wireshark

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Filter: Expression... Clear Apply

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1	0.000000	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
2	6.822555	Microsof_a7:ab:0c	Broadcast	ARP	Who has 10.5.2.2? Tell 10.5.12.12
3	6.825955	Microsof_a0:ab:0c	Microsof_a7:ab:0c	ARP	10.5.2.2 is at 00:03:ff:a0:ab:0c
4	6.826098	10.5.12.12	10.5.2.2	TCP	dmidi > http [SYN] Seq=0 Win=65535 Len=0 MSS=1460
5	6.826889	10.5.2.2	10.5.12.12	TCP	http > dmidi [SYN, ACK] Seq=0 Ack=1 win=17520 Len=0 M
6	6.827085	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=1 Ack=1 win=65535 Len=0
7	6.827797	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
8	6.831687	10.5.2.2	10.5.12.12	TCP	[TCP segment of a reassembled PDU]
9	6.831733	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 401 Unauthorized (text/html)
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1873 win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.12.12? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	AS-REP
16	6.908274	10.5.12.12	10.5.3.1	KRB5	TGS-REQ
17	6.950124	10.5.3.1	10.5.12.12	KRB5	TGS-REP

Frame 17 (1334 bytes on wire, 1334 bytes captured)

- Ethernet II, Src: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c), Dst: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c)
- Internet Protocol, Src: 10.5.3.1 (10.5.3.1), Dst: 10.5.12.12 (10.5.12.12)
- User Datagram Protocol, Src Port: kerberos (88), Dst Port: nucleus-sar
- Kerberos TGS-REP
 - Pvno: 5
 - MSG Type: TGS-REP (13)
 - Client Realm: DENYDC.COM
 - Client Name (Principal): Administrator
 - Ticket
 - Tkt-vno: 5
 - Realm: DENYDC.COM
 - Server Name (Service and Instance): HTTP/upwin2003.denydc.com
 - enc-part rc4-hmac
 - enc-part rc4-hmac

0040 44 45 4e 59 44 43 2e 43 4f 4d a4 1a 30 18 a0 03 DENYDC.COM..0...

0050 02 01 01 a1 11 30 0f 1b 0d 41 64 6d 69 6e 69 730...Adminis

0060 74 72 61 74 6f 72 a5 82 03 ce 61 82 03 ca 30 82 trator...a...0.

0070 03 c6 a0 03 02 01 05 a1 0c 1b 0a 44 45 4e 59 44DENYD

The name part of the client pri... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Ticket Granting Server sendet Client Ticket für upwin2003

Krb-contrained-delegation.cap - Wireshark

File Edit View Go Capture Analyze Statistics Help

Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
10	6.831792	10.5.12.12	10.5.2.2	TCP	dmidi > http [ACK] Seq=222 Ack=1873 Win=65535 Len=0
11	6.849438	10.5.12.12	10.5.3.1	KRB5	AS-REQ
12	6.883497	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.3.2? Tell 10.5.3.1
13	6.903524	Microsof_a6:ab:0c	Broadcast	ARP	Who has 10.5.12.12? Tell 10.5.3.1
14	6.903580	Microsof_a7:ab:0c	Microsof_a6:ab:0c	ARP	10.5.12.12 is at 00:03:ff:a7:ab:0c
15	6.906734	10.5.3.1	10.5.12.12	KRB5	AS-REP
16	6.909274	10.5.12.12	10.5.3.1	KRB5	TGS-REQ
17	6.950124	10.5.3.1	10.5.12.12	KRB5	TGS-REP
18	6.955212	10.5.12.12	10.5.2.2	TCP	[TCP segment of a reassembled PDU]
19	6.955390	10.5.12.12	10.5.2.2	HTTP	GET /1.asp HTTP/1.1
20	6.955319	10.5.2.2	10.5.12.12	TCP	http > dmidi [ACK] Seq=1873 Ack=2182 Win=17520 Len=0
21	7.013702	10.5.2.2	10.5.3.1	TCP	icp > kerberos [ACK] Seq=0 Win=16384 Len=0 MSS=1460
22	7.013725	10.5.3.1	10.5.2.2	TCP	kerberos > icp [ACK] Seq=0 Ack=1 Win=17520 Len=0
23	7.025295	10.5.2.2	10.5.3.1	TCP	icp > kerberos [ACK] Seq=1 Ack=1 Win=17520 Len=0
24	7.025314	10.5.2.2	10.5.3.1	TCP	[TCP segment of a reassembled PDU]
25	7.025335	10.5.2.2	10.5.3.1	KRB5	
26	7.025357	10.5.3.1	10.5.2.2	TCP	
27	7.035536	10.5.2.2	10.5.3.1	TCP	

Client wendet sich erneut an Webserver upwin2003. Jetzt mit Credential!

Frame 19 (554 bytes on wire (554 bytes captured))

Ethernet II, Src: Microsof_a7:ab:0c (00:03:ff:a7:ab:0c), Dst: Microsof_a6:ab:0c (00:03:ff:a6:ab:0c)

Internet Protocol, Src: 10.5.12.12 (10.5.12.12), Dst: 10.5.2.2 (10.5.2.2)

Transmission Control Protocol, Src Port: dmidi (1199), Dst Port: http (80)

[Reassembled TCP Segments (1960 bytes): #18(1460), #19(500)]

Hypertext Transfer Protocol

GET /1.asp HTTP/1.1\r\n

Accept: */*\r\n

Accept-Language: en-us\r\n

Accept-Encoding: gzip, deflate\r\n

User-Agent: Mozilla/4.0 (compatible; MSIE 6.0; Windows NT 5.1; SV1; .NET CLR 1.1.4322)\r\n

Host: upwin2003\r\n

[truncated] Authorization: Negotiate YIIIE/gYGKwYBBQUCoIIIE8jCCB06gJDAiBqkqhkiC9xIBAgIGCSqGSIB3EgECAGYKKwYBBAGCNwICCqKCBMQEggT...

00d0 65 65 70 2d 41 6c 69 76 65 0d 0a 41 75 74 68 6f eep-Aliv e..Autho

00e0 72 69 7a 61 74 69 6f 6e 3a 20 4e 65 67 6f 74 69 rization : Negoti

00f0 61 74 65 20 59 49 49 45 2f 67 59 47 4b 77 59 42 ate YIIIE /gYGKwYB

Frame (554 bytes) Reassembled TCP (1960 bytes) NTLMSSP / GSSAPI Data (1282 bytes)

HTTP Authorization header (ht... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Krb-contrained-delegation.cap - Wireshark

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Filter: Expression... Clear Apply

No.	Time	Source	Destination	Protocol	Info
51	7.122341	10.5.3.1	10.5.2.2	SMB	Session Setup AndX Response
52	7.138173	10.5.2.2	10.5.3.1	SMB	Tree Connect AndX Request, Path: \\VPC-W2K3ENT\DATA1
53	7.144250	10.5.3.1	10.5.2.2	SMB	Tree Connect AndX Response
54	7.145825	10.5.2.2	10.5.3.1	SMB	Trans2 Request, QUERY_PATH_INFO, Query File Basic Inf
55	7.145844	10.5.3.1	10.5.2.2	SMB	Trans2 Response, QUERY_PATH_INFO
56	7.147166	10.5.2.2	10.5.3.1	SMB	Trans2 Request, QUERY_PATH_INFO, Query File Basic Inf
57	7.147186	10.5.3.1	10.5.2.2	SMB	Trans2 Response, QUERY_PATH_INFO
58	7.164054	10.5.2.2	10.5.3.1	SMB	NT Create AndX Request, Path: \
59	7.164074	10.5.3.1	10.5.2.2	SMB	NT Create AndX Response, FID: 0x400e
60	7.165275	10.5.2.2	10.5.3.1	SMB	Trans2 Request, QUERY_FILE_INFO, FID: 0x400e, Query F
61	7.165294	10.5.3.1	10.5.2.2	SMB	Trans2 Response, FID: 0x400e, QUERY_FILE_INFO
62	7.173537	10.5.2.2	10.5.3.1	SMB	Trans2 Request, FIND_FIRST2, Pattern: \text.txt
63	7.193850	10.5.3.1	10.5.2.2	SMB	Trans2 Response, FIND_FIRST2, Files: text.txt
64	7.195148	10.5.2.2	10.5.3.1	SMB	Close Request, FID: 0x400e
65	7.195167	10.5.3.1	10.5.2.2	SMB	Close Response, FID: 0x400e
66	7.197642	10.5.2.2	10.5.12.12	HTTP	HTTP/1.1 200 OK (text/html)
67	7.337433	10.5.12.12	10.5.2.2	TCP	dmidi -> http [ACK] Seq=2102 Ack=2400 Win=65535 Len=0
68	7.492102	10.5.2.2	10.5.3.1	TCP	lmsocialserve -> microsoft-ds [ACK] Seq=2413 Ack=1206

Frame 66 (581 bytes on wire, 581 bytes captured)

- Ethernet II, Src: Microsof_a0:ab:0c (00:03:ff:a0:ab:0c), Dst: Microsof
- Internet Protocol, Src: 10.5.2.2 (10.5.2.2), Dst: 10.5.12.12 (10.5.12.12)
- Transmission Control Protocol, Src Port: http (80), Dst Port: dmidi (C
- Hypertext Transfer Protocol
 - HTTP/1.1 200 OK\r\n
 - Date: Wed, 15 Feb 2006 10:20:42 GMT\r\n
 - Server: Microsoft-IIS/6.0\r\n
 - X-Powered-By: ASP.NET\r\n
 - [truncated] WWW-Authenticate: Negotiate oYGfMIGcoAMKAQChCWYJKoZIgvcSAQICooGHBIGeYIGBBgkqhkiG9xIBAgICAG9yMHCgAwIBBaEDAgEPo
 - GSS API Generic Security Service Application Program Interface
 - Content-Length: 39
 - Content-Type: text/html\r\n
 - Set-Cookie: ASPSESSIONIDSADDTCTQ=NMFBPLHBCECKJBKKPDANJCG; path=/\r\n
 - Cache-control: private\r\n
 - \r\n
 - Line-based text data: text/html

0090 2d 42 79 3a 20 41 53 50 2e 4e 45 54 0d 0a 57 57 -By: ASP .NET..WW

00a0 57 2d 41 75 74 68 65 6e 74 69 63 61 74 65 3a 20 w-Authen ticate:

00b0 4e 65 67 6f 74 69 61 74 65 20 6f 59 47 66 4d 49 Negotiat e oYGfMI

Frame (581 bytes) NTLMSSP / GSSAPI Data (162 bytes)

HTTP WWW-Authenticate hea... Packets: 68 Displayed: 68 Marked: 1 Profile: Default

Und dieses Mal klappt der Zugriff!

Mal selber reinschauen?

- Wireshark installieren
 - <http://www.wireshark.org/download.html>
- Sample Trace runterladen
 - <http://wiki.wireshark.org/SampleCaptures?action=AttachFile&do=view&target=constained-delegation.zip>
 - jede Menge mehr Sample Traces auf <http://wiki.wireshark.org/SampleCaptures>