

Department of Computer Engineering

COM 299 Industrial Training I Report

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1 July - 2 August, 2013

Confirmation

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Abstract

I completed my internship at All-for-One Steeb AG. This firm is at Stuttgart, Germany. The firm has different vendors Bens-

heim,Dortmund,Frankfurt,Hamburg,Karlsruhe,Munich,Weingarten,Berlin,Düsseldorf,Heilbro nn,Memmingen,Stuttgart,Brussels,Regensdorf,St.Gallen,Luxembourg,Wien.Center is at Stuttgart,Filderstadt.

The firm has many departments which names are CoA(Cloud an Office Applications),Operating Systems,Infrastructure,SAP Basis,SAP Application,Development,Networks.I worked at CoA,SAP Basis,Development,Networks.

1. Introduction

I completed my internship at Stuttgart, Germany. The firm's name is All-for-One Steeb AG.This firm serves SAP Services.But firm has different departmants Networks,SAP,Cloud An Office Applications,SAP Development,Service Desk,Operating Systems,Infrastructure.Firm has two datacenters at Frankfurt.I visited there and I worked too.I worked different departmans because internship students in Germany must work different departmants in firms.

First week,I worked Cloud An Office Applications.We configured Exchange 2010 Services on a Server which belongs to one of the customer with my colleague Alexander Beck.Than we installed software in a Customer Citrix Farm.

At the end of the first week, we configured a Smarthost for an SMTP Server.We had small team meeting.I prepared my presentation, it was my task for this department.

Second week I worked at SAP Development. It is programming department for SAP. I worked with Rosenauer Hansgeorg who is the teamleader of this department.

First two days I improved myself on ABAP Workbench. Than I did some Abap Applications.

I presentated my task and completed successfully.

Third and fourth week I worked at Networks Departmant.I worked with Gero Beck who is the teamleader of this departmant.

First week Gero Beck gave some informations about General Network Design. That was the most fructous weeks for me. I configured real switches and routers on Cisco Packet Tracer and GNS3.I went to Frankfurt with Network Team and Operating Systems' teamleader for visiting datacenters and cabling in there. We did some applications on Wireshark about packages.

At the end of the week I presentated my project which is about Site-to-Site IP Sec VPN.

Fifth week I worked at SAP Basis Departmant. I worked with Ümüt Parlar and Mustafa Dönmez.

First two days learnerd how to install SAP System on a PC.Ümüt Parlar gave some general informations about Databases(Max DB,HANA,MS-SQL,DB2,Sybase),technical structure of Oracle 11.2, Bakcup,Recovery,Point in Time Recovery.

I worked with Mustafa Donmez about Database Architecture and Using Max DB and Oracle on SAP System.

At the end of the we used and configured SAP GUI.

2. Company Information

All-for-One Steeb AG has vendors all over the Germany and Europe. Bensheim,Berlin, Dortmund ,Frankfurt,Düsseldorf,Hamburg,Heilbronn,Memmingen,Munich,Karlshue,Stuttgart

Brussels, Regensdorf, St. Gallen, Wien, Luxembourg vendors are at different regions of Europe.

All-for-One has over 1000 employee at different places. At the above you see that they work at Stuttgart.

6 Network

10 Cloud Services

6 Infrastructure

43 SAP Technology

40 SAP Project

90 Development

12 Operating Systems

200 Consultants

Service Managers (Key Account Manager).

All-for-One provides SAP Services for companies. SAP Basis Department uses different Databases. They use and provide Max-DB, MS-SQL, HANA databases.

SAP Development Department uses JAVA and ABAP Programming Environment.But they prefer ABAP rather than JAVA. Because JAVA has performance causes. JAVA is not ready for SAP yet.

But the main are of the firm is SAP Services. However they also provide Network, Cloud Services, Operating Systems. This services work coordinately with SAP Departments.

All-for-One Steeb AG Stuttgart is the biggest company of the Baden-Württemberg state for its sector. Endorsement of the firm is 186,3 Mio and Profit of the firm is 13,7 Mio per annum.

2.1. Supervisor Information

Ümüt Parlar ,Informatics Department at Stuttgart University '1996'.His professions are Cisco Engineering, Network Design, Networking

He is working at SAP Basis Department. He knows concepts of databases and designs of MS-SQL, Oracle Database, HANA.

umut.parlar@all-for-one.com

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2.2. Training Team Members Information

1-Alexander Beck

He graduated Informatics Department at Stuttgart University '2000'. His professions are Remote Desktop, Exchange Server 2010, Citrix Xen App.

2-Rosenauer Hansgeorg

He graduated Informatics Department at Stuttgart University '1999'. His professions are Software Engineering. ABAP, C, Eclipse Java Server Faces.

He works All-for-One Steeb AG since it opens.

3-Ümüt ParlarHe graduated Informatics Department at Stuttgart University '1996'.His professions are Cisco Engineering, Network Consultant. He works SAP Basis Department.Oracle,MS-SQL,DB2,Sybase,Max-DB.

4-Gero Beck

He graduated Informatics Department at Stuttgart University '2001'. He worked at Alcatel. He works there since 2 years. His professions are Cisco Engineering.GNS3,Cisco Packet Tracer, Network Design This page is intentionally left blank.

3. Training Work

I have done different main projects due to I worked different department.

I configured Citrix Farm and I installed a program which name was Personal Office at Cloud an Office Application Department.

I configured Cisco Routers and Switches at Network Department. My main project is that department is Site-to-Site Security VPN at the end of the week.

I did some ABAP applications at Development Department. Mr. Roseanauer gave me a project which is about Personal Stuff and their Salaries. The procedure is I must use inheritance on that project.

At SAP Basis Department they gave me general information about SAP, and Databases Architecute, Introduction to SAP Clients, Transport Management System, Transaction Codes.

An Installation NetWeaver AS ABAP 7.03 Version of PC.

3.1. Main Project

My main project at Network Department is Site-to-Site IP Security VPN.Before I did this project I take courses from Gero Beck, Martin Feurer, Ümüt Parlar, Michael Mamelow ten days.I finished this project 4 days.

A virtual private network (VPN) extends a private network across a public network, such as the Internet. It enables a computer to send and receive data across shared or public networks as if it were directly connected to the private network, while benefiting from the functionality, security and management policies of the private network.

First I found some VPN samples on Internet. I draw my VPN to Visio. Then I started the configuration based on GNS3.

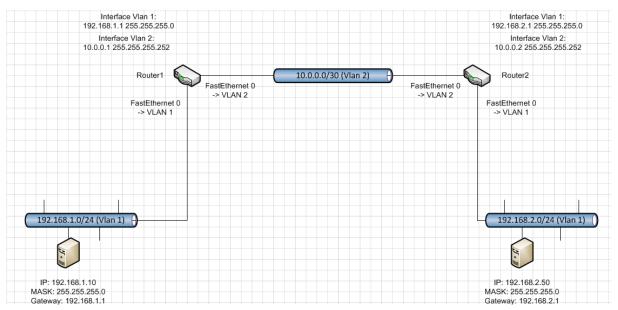


Figure 1: My technic drawing VPN Connection based on MS-Visio

Chica

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Eile Edit View Control Device		
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Node Types #	4	▲ Topology Summary
Router c1700		▷ 🝚 R1
Router c2600		⊳ 🝚 R2
Router c2691		> 🝚 SW1
Router c3600		
Router c3700	R1 SW1 R2	
Router c7200		
PIX firewall		
ASA firewall		
Juniper router		
Ethernet switch		
ATM bridge		
ATM switch		
Frame Relay switch		
EtherSwitch router		
IDS IDS		
💻 Qemu guest		
VirtualBox guest		
💻 Host		
Cloud		
		Captures & ×
		Hostname Interface
		-
	e	
	Console 5	×
	File "GMS3/Dynagen/dynamips_jib.pyo", line 2318, in start	*
	File "GNS3UDynagen(dynamps_lbz,pyo", Ine 4819, in send	
	DynamipsError: 209-unable to start VM instance 'ghost-c/200p-advisecuntlyk9-mz.124-24.T6.image-127.0.0.1.ghost'	100
		111
		*
	2	

Figure 2: VPN Connection based on GNS3

Here is some important part of my project.

Router1
crypto isakmp policy 1
hash md5
authentication pre-share
crypto isakmp key cisco123 address 10.0.0.2
!
!
crypto ipsec transform-set RouterIPSEC esp-des esp-md5-hmac
!
crypto map toRouter2 1 ipsec-isakmp
set peer 10.0.0.2
set transform-set RouterIPSEC
match address 100
protected vrf:
local ident (addr/mask/prot/port): (192.168.1.0/255.255.255.0/0/0)
remote ident (addr/mask/prot/port): (192.168.2.0/255.255.255.0/0/0)
inbound esp sas:
spi: 0x70EDD016(1894633494)
transform: esp-des esp-md5-hmac,

Above scheme is about for configuration procedures about Router 1. Firstly I encrypted Router 1.For security. Then I defined IP address gap for users.

Router2 crypto isakmp policy 1 hash md5 authentication pre-share crypto isakmp key cisco123 address 10.0.0.1 ! crypto ipsec transform-set RouterIPSEC esp-des esp-md5-hmac crypto map toRouter1 1 ipsec-isakmp set peer 10.0.0.1 set transform-set RouterIPSEC local_ident (addr/mask/prot/port): (192.168.2.0/255.255.255.0/0/0) remote_ident (addr/mask/prot/port): (192.168.1.0/255.255.255.0/0/0)

This configuration procedure about for Router2. First I encrypted router for security. Then I gave the IP gap for users who wants to connect.

Router 1

🕑 R1 🔗 estado	Research International Contractory	
routerl∳sh crypto ips routerl∳sh crypto ipsec sa routerl∮sh crypto ipsec sa		
interface: FastBthernet0/0 Crypto map tag: toRouter2, local addr. 10.0.0.1		
<pre>protected vrf: local ident (addr/mask/prot/port): (192.168.1.0/255.255.255.0/0/0) remote ident (addr/mask/prot/port): (192.168.2.0/255.255.255.0/0/0) current_prest; 10.0.0.2:000 FBOHTT, Flaque(origin_in_acl,) #phts encaps: 4, #phts decrypt: 4, #phts digest 4 #phts decaps: 9, #phts decrypt: 9, #phts werify 9 #phts compressed: 0, #phts decompressed: 0 #phts not compressed: 0, #phts decompressed: 0 #phts not decompressed: 0, #phts decompressed i 0 #phts not decompressed: 0, #phts decompress failed: 0 #send errors 1, #recv errors 0</pre>		
local crypto endpt.: 10.0.0.1, remote crypto endpt.: 10.0.0.2 path mtu 1500, ip mtu 1500, ip mtu idb FastEthernet0/0 current outbound spi: 41921883		
<pre>inbound esp sas: spi: 0x70EDD016(1894633494) transform: esp-des esp=md5-hmac , in use settings ={Tunnel, } slot: 0, conn id: 2000, flow id: 1, crypto map: toRouter2 sa timing: remaining key lifetime (k/sec): (4398679/2795) IV size: 8 bytes replay detection support: Y</pre>		
inbound ah sas:		
inbound pcp sas:		
outbound esp sas: spi: 0x41921883(1100093571) transform: esp-des esp-md5-hmac , in use settings ={Tunnel, } slot: 0, conn id: 2001, flow id: 2, crypto map: toRouter2 sa timing: remaining key lifetime (k/sec): (4398680/2792) IV size: 8 bytes replay detection support: Y		
outbound ah sas:		
outbound pcp sas: router1#		111

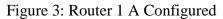
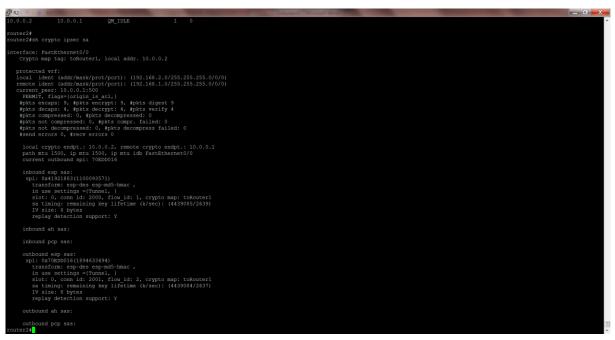




Figure 4: Router 1 A VPN is set it up.

Router 2





🚰 R2	Statement of the local division of the local	And in case of the local division of the loc	the local division in which the local division in the local divisi	the second s	And Personal Property lies of the less of		_ 0 <u>_ × -</u>
router2#\$							*
router2#sh run							
router2#							
router2#							
router2#							
router2#							
router2#							
router2#							
router2#sh cry	pto ipsec sa						
interface: Fas Crypto map							
protected v							
			2.168.2.0/255.255.255.0/0/0)				
remote iden	r: 10.0.0.1:50	rot/port): (192	2.168.1.0/255.255.255.0/0/0)				
DEDMIN +	lags={origin i:	0					
		ncrypt: 9, #pkt	e digaet 9				
		ecrypt: 4, #pkt					
		ts decompressed					
		#pkts compr. f					
			ress failed: 0				
	rs 0, #recv er						
local cry	pto endpt.: 10	.0.0.2, remote	crypto endpt.: 10.0.0.1				
			FastEthernet0/0				
	utbound spi: 70						
inbound e							
spi: 0x4							
transf	orm: esp-des e:	sp-md5-hmac ,					
router2#							
router2#							
router2#							
router2#							
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router2#							
router2#							
router2#							
router2#							
router2#							
router2#							
router2#							
router2#							
router2#sh cry			conn-id slot				
dst	src 10.0.0.1	state	conn-id slot 1 0				11
10.0.0.2	10.0.0.1	QM_IDLE					
							v

Figure 6: Router 2 A VPN is set up.

Cloud and Office Applications Department

I installed a Personal Office Software into Customer Citrix Farm. Before I start installation I eject and closed from Citrix Farm. Then I start and configure. Before I start this project I take courses from Alexander Beck, Marcus Brückner, Harald Gemeinsam and the team leader of

this department Benjamin Ott. This course includes Active Directory, Exchange Server 2010.At the end of the week I gave course Differences Between Citrix Xen App and Windows 2012 Remote Desktop Session Host at Cloud Applications' team meeting.

Configuration of Citrix Farm



Figure 7: Select Access Management Console on Start Menu

ligenschaften:	Server		
📮 Grundlagen	Server:		
 Name Typ Server Benutzer Verknüpfungsdarstellung Erweitert Zugriffssteuerung Limits Clientoptionen Darstellung 	Name NRDCTX004 NRDCTX005 NRDCTX006 NRDCTX007 NRDCTX008 NRDCTX009 NRDCTX010 NRDCTX010 NRDCTX011 NRDCTX011 NRDCTX012 NRDCTX013 NRDCTX014 NRDCTX015	Relativer Speicherort Server Server	
		₽	
	12 Elemente Hinzufügen	ntfemen	Von Datei importieren

Figure 8: Overview of Citrix Farm

Server					
Server					
5erver 🛆	Produkt	Version	Service Pack	Betriebssystemtyp	TCP-Adresse
NRDCTX002	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.198
NRDCTX003	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.197
NRDCTX004	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.196
NRDCTX 35	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.195
NRDCTX006	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.203
NRDCTX007	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.204
NRDCTX008	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.205
NRDCTX009	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.206
NRDCTX010	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.207
NRDCTX011	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.208
NRDCTX012	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.209
NRDCTX013	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.177
NRDCTX014	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.143
NRDCTX015	Citrix XenApp für Windows,	5.1	0	Windows Server 2008	10.251.21.145

Figure 9: Overview Of Customers Servers



Figure 10: Entered Properties of Customer Citrix Farm

Benutzer							
Name	Benutzer	Sitzungs-ID	Anwendung	Тур	Status	Clientname	Anmeldezeit
🔒 ICA-tcp#0	mscholz	2	Test_Desktop	ICA	Aktiv	NB609	03.07.2013 08:36
🔒 ICA-tcp#2	asawatzky	5	Desktop_NrdCt	ICA	Aktiv	NB599	03.07.2013 15:0:
🔒 ICA-tcp#0 🛛 📐	rmueller	2	Desktop_NrdCt	ICA	Aktiv	NB530	03.07.2013 14:4:
ICA-tcp#7	erossmann	9	Desktop XenApp5	ICA	Aktiv	SA296	03.07.2013 06:54
🔒 ICA-tcp#15	fmuller	17	Desktop XenApp5	ICA	Aktiv	NB525	03.07.2013 07:55
🔒 ICA-tcp#22	hgoebel	24	Desktop XenApp5	ICA	Aktiv	PC502	03.07.2013 08:44
🔒 ICA-tcp#0	mainzdp	2	Desktop XenApp5	ICA	Aktiv	SA039	03.07.2013 05:13
ICA-tcp#19	mw2metall	21	Desktop XenApp5	ICA	Aktiv	SA145	03.07.2013 08:17
🔒 ICA-tcp#1	nrdadm	3		ICA	Aktiv	MGTWTS001	03.07.2013 15:13
🔒 ICA-tcp#8	rhwpax	10	Desktop	ICA	Aktiv	SA012	03.07.2013 07:0
🔒 ICA-tcp#9	sstork	11	Desktop XenApp5	ICA	Aktiv	PC501	03.07.2013 07:2
🔒 ICA-tcp#23	walts1	23	Desktop XenApp5	ICA	Aktiv	SA189	03.07.2013 09:1
🔒 ICA-tcp#20	wghawo	22	Desktop XenApp5	ICA	Aktiv	SA263	03.07.2013 08:3
🔒 ICA-tcp#12	wgstuckert	14	Desktop	ICA	Aktiv	SA021	03.07.2013 07:4
🔒 ICA-tcp#6	wichern3a	8	Desktop	ICA	Aktiv	SA127	03.07.2013 06:2
🔒 ICA-tcp#6	Arche11	8	Desktop XenApp5	ICA	Aktiv	SA115	03.07.2013 06:2
🔒 ICA-tcp#20	bdeuer	22	Desktop	ICA	Aktiv	SA200	03.07.2013 08:2
🔒 ICA-tcp#5	cfalkenberg	7	Desktop XenApp5	ICA	Aktiv	NB570	03.07.2013 08:3
🔒 ICA-tcp#7	ikoch	9	Desktop	ICA	Aktiv	SA317	03.07.2013 06:5
JCA-tcp#15	jugts	17	Desktop XenApp5	ICA	Aktiv	NB539	03.07.2013 07:5
CA-tcp#24	kschmidt kschwigt	26 59	Desktop XenApp5 Desktob Xeuyob2	ICA ICV	Aktiv VKGA	SA725	03.07.2013 09:2: 03:05:5013 08:5
ICA-tcp#15	jugts	17	Desktop XenApp5	ICA	Aktiv	NB539	03.07.2013 07:5
ICA-tcp#7	ikoch	9	Desktop	ICA	Aktiv	SA317	03.07.2013 06:5
JICA-tcp#5	cfalkenberg		Desktop XenApp5	ICA	Aktiv	NB570	03.07.2013 06:3

📨 Ausfül	nren	×
	Geben Sie den Namen eines Programms, Ordners, Dokuments oder einer Internetressource an.	
Öffnen:	Cmd Task wird mit Ad anistratorberechtigungen erstellt.	
		8
	OK Abbrechen Durchsuchen	

Figure 11: Citrix Update Software

This figure views Citrix Update Software.

Administrator: C:\Windows\system32\cmd.exe	-O×
Microsoft Windows [Version 6.0.6002] Copyright (c) 2006 Microsoft Corporation. Alle Rechte vorbehalten.	-
Z:∖>change user ∕install Benutzersitzung ist bereit für die Installation von Anwendungen.	
Z:\>_	
×	
	-
Kurzdokus 02.07.2013 09:34 Information zum Hot 17.06.2013 15:17	
PersInst.exe 17.06.2013 14:50	
Personal Office Let 25.03.2013 18:49	
Personal Office Rele 02.05.2013 14:11	
Personal Office Syst 02.05.2013 14:12	
setup.ini 17.06.2013 15:18	

Figure 12: Start to Install Personel Office Software

25.06.2013 09:20

🚳 Thumbs.db

This figure about to start to install software. We selected Software which we install. Then we started installing to destination servers. Installation von Personal Office Release 13.3.1.2





Figure 13: Overview of Software



Figure 13 : Steps of Installation



NRD099	NRDCTX006	NRDCTX0	Hinzufügen
NRDCTX001 NRDCTX002	NRDCTX007	NRDCTX0 NRDCTX0	
NRDCTX002	NRDCTX009	NRDCTX0	Alle hinzufügen
NRDCTX004	NRDCTX010		- Unterordner
NRDCTX005	NRDCTX011	F	einschließen
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nne - I of			Alle entfernen
ine J			Alle entfernen
ine J			Alle entfernen
ine J			Alle entfernen

Figure 14: Discarding Servers from Citrix Farm

ersonal Office Release 13.3.1.2			
Datei wird installiert			<u>e</u>
Aktuelle Datei Kopieren von Datei:	Ð		
C:\Windows\system32\ctschedule.ocx			
Verbleibende Zeit: 0 Minuten, 18 Sekunden			
/ise Installation Wizard®			
	< Zurück	Weiter >	Abbrechen

Figure 15: Installing software into the Servers

ABAP Development Department

ABAP (Advanced Business Application Programming, originally *Allgemeiner Berichts-Aufbereitungs-Prozessor*, German for "general report creation processor") is a <u>high-level pro-</u> gramming language created by the German <u>software</u> company <u>SAP</u>. It is currently positioned, alongside the more recently introduced <u>Java</u>, as the language for programming the <u>SAP Ap-</u> <u>plication Server</u>, part of its <u>NetWeaver</u> platform for building business applications. The syntax of ABAP is somewhat similar to <u>COBOL</u>.

ABAP is one of the many application-specific fourth-generation languages (4GLs) first developed in the 1980s. It was originally the report language for <u>SAP R/2</u>, a platform that enabled large corporations to build mainframe business applications for materials management and financial and management accounting.

ABAP used to be an abbreviation of *Allgemeiner BerichtsAufbereitungsProzessor*, German for "generic report preparation processor", but was later renamed to the English *Advanced Business Application Programming*. ABAP was one of the first languages to include the concept of *Logical Databases* (LDBs), which provides a high level of abstraction from the basic database level(s).

The ABAP language was originally used by developers to develop the <u>SAP R/3</u> platform. It was also intended to be used by SAP customers to enhance SAP applications – customers can develop custom reports and interfaces with ABAP programming. The language is fairly easy to learn for programmers but it is not a tool for direct use by non-programmers. Knowledge of relational database design and preferably also of object-oriented concepts is necessary to create ABAP programs.

ABAP remains as the language for creating programs for the client-server $\mathbb{R}/3$ system, which SAP first released in 1992. As computer hardware evolved through the 1990s, more and more of SAP's applications and systems were written in ABAP. By 2001, all but the most basic functions were written in ABAP. In 1999, SAP released an object-oriented extension to ABAP called ABAP Objects, along with $\mathbb{R}/3$ release 4.6.

SAP's current development platform NetWeaver supports both ABAP and Java.

This department is the hardest for me. Because programmer works so hard and they interested me so less. I genearally worked with the team leader of this department Rosenauer Hansgeorg. He gave me some documents and book PDFs about ABAP Programming.I learned by myself. First day he gave me a project about using inheritance with personel record and salary calculation. He told me about creating ABAP projects and ALV-Grid table.

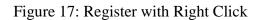
In this department my project is calculating employees' salary with using inheritance. Firstly I connected my SAP account which is given by the firm. I write transaction code(se80) for accessing ABAP Development Workbench. The program is for calculating salaries of employees who are different experiences and works different departments.

Variables are contingent upon me. I defined names and their experiences and their positions.



Figure 16: Connecting SAP Server

Name			≜ Systemb	SID	Gruppe/Server	Inst.Nr.	Messag
🚯 *Af	<u>A</u> nmelden	Eing.		DEV	10.251.	00	
	<u>L</u> öschen	Entf					
	Ans <u>i</u> cht	•					
	Eigenschaften	Strg+E					



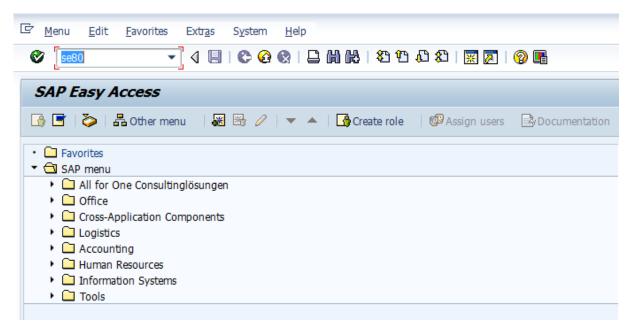


Figure 18: Writing Transaction code se80 to attain ABAP Workbench

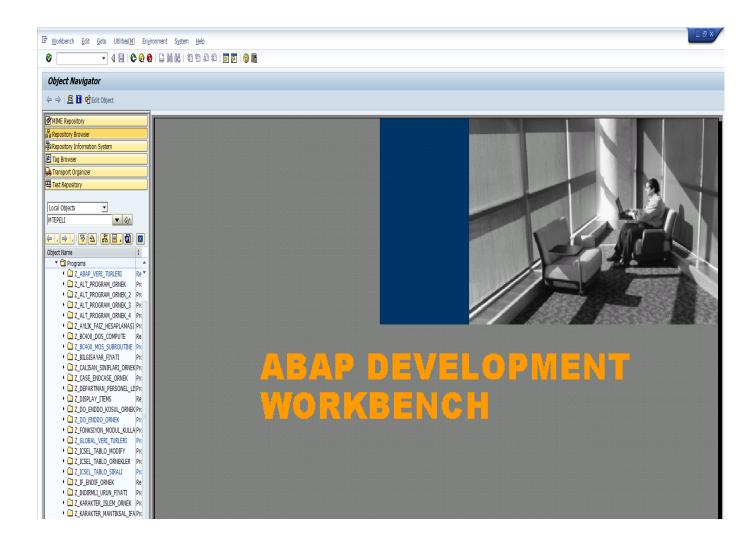


Figure 19: Overview of ABAP Development Workbench

며 Program Edit Goto Utilities Environmen	it System <u>H</u> elp
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ABAP Editor: Change Report Z_CL	ASS INHERITANCE SAMPLE
← ⇒ 1 ≫ % ੴ @ ♣ * ■ ↔ ♣	
MIME Repository	Report Z CLASS INHERITANCE SAMPLE Inactive
Hara Repository Browser	1 - *6*
Repository Information System	
<u> </u>	2 *& Report Z_CLASS_INHERITANCE_SAMPLE 3 *&
Tag Browser	
🖶 Transport Organizer	4 *£*
Test Repository	5 *£
	6 *&
Local Objects	7 *&*
MTEPELI 🔻 🚱	8
	9 REPORT Z CLASS INHERITANCE SAMPLE.
두	10
Object Name D	11 • **
▼ 🗋 Programs	12 * CLASS lcl employee DEFINITION
Z_ABAP_VERI_TURLERI Rep	13 **
Z_ALT_PROGRAM_ORNEK Prog	14 *
Z_ALT_PROGRAM_ORNEK_2 Proj	15 **
Z_ALT_PROGRAM_ORNEK_3 Proj	16 Ficlass
Z_ALT_PROGRAM_ORNEK_4 Proj	
Z_AYLIK_FAIZ_HESAPLAMASI Prov	17 1cl_employee DEFINITION ABSTRACT. 18 PUBLIC SECTION.
Z_BC400_DOS_COMPUTE Rep	
Z_BC400_MOS_SUBROUTINE Prov	19
Z_BILGISAYAR_FIYATI Prov	20 CONSTANTS : c_director TYPE string VALUE 'Director',
Z_CALISAN_SINIFLARI_ORNEK Prov	21 c_engineer TYPE string VALUE 'Engineer',
Case_endcase_ornek	22 C_worker TYPE string VALUE 'Worker',
 Z_CLASS_INHERITANCE_SAMP Prov Classes 	23 c_admin_staff TYPE string VALUE 'Administrative Staff'.
Classes Classes Classes Classes	24
▼ □ Methods	25
CONSTRUCTOR	26 TYPES : gty_salary TYPE p LENGTH 8 DECIMALS 2,
WRITE_PROPER	27 gty_cost TYPE p LENGTH 8 DECIMALS 2.
	28
Method Implementa	29
LCL_DIRECTOR	30 DATA : mv name TYPE string read-only,
LCL_EMPLOYEE	31 mv surname TYPE string read-ONLY.
LCL_ENGINEER	
LCL_WORKER	33
Fields	34
Events	35 METHODS : constructor
🔹 🔂 Includes	36 IMPORTING iv name TYPE string
Z_CLASS_INHERIT_SAMPLEInd Z_CLASS_INHERIT_SAMPLEIND	
 Z_CLASS_INHERIT_SAMPL{Incl Z_CLASS_INHERIT_SAMPL{Incl 	37 iv_surname TYPE string,
Z_CLASS_INHERIT_SAMPLEIICH Z_CLASS_INHERIT_SAMPLEIICH	38
 Z_CLASS_INHERIT_SAMPL{Incl	39

Figure 20 :Head of my Programming Project.

ject name	e					
Object	Obj. name			User		
	Z_ABAP_VERI_TURLERI			MTEPELI		•
REPS	Z_BC400_MOS_SUBROUTINE			MTEPELI		-
REPS	Z_CLASS_INHERITANCE_SAMPLE			MTEPELI		#
REPS	Z_DO_ENDDO_ORNEK			MTEPELI		
REPS	Z_GLOBAL_VERI_TURLERI			MTEPELI		
REPS	Z_ICSEL_TABLO_SIRALI			MTEPELI		
REPS	Z_MANTIKSAL_OPERATOR_ORNEK			MTEPELI		
REPS	Z_PERSONEL_BILGI_SISTEMI			MTEPELI		
REPS	Z_SINIF_KALITIM_ORNEK			MTEPELI		
REPS	<pre>Z_TEMEL_ABAP_DEYIMLERI</pre>			MTEPELI		
CPUB	ZCL_HESAP_MAKINESI			MTEPELI		
METH	ZCL_HESAP_MAKINESI	CONSTRUCTOR		MTEPELI		
						-
					4 >	

Figure 21: Activating Program

In ABAP Environment, before running the code you ought to activate the code. If you don't have any exception code activate successfully.

င List Edit <u>G</u> oto System Help		
🖉 🔽 🗸 🖽 🖓 🛄 😓 🚱 🚱 😓 🛄 🔛 🖾 🕄 🔜		
	-	
Program Z_CLASS_INHERITANCE_SAMPLE		
r		
Program Z_CLASS_INHERITANCE_SAMPLE		
Director attributes :		
Director : Martin Feuerer Departmant : ACCOUNTING		
Salary : 7.000,00		
Director attributes :		
Director : Gero Beck		
Departmant : PRODUCTIVE Salary : 7.000,00	\searrow	
	45	
Worker properties :		
Worker : Kreitmeir Robert		
Departmant : ACCOUNTING Salary : 1.000,00		
Engineer attributes :		
Engineer : Hansgeorg Rosenauer		
Departmant : PRODUCTIVE Salary : 3.000,00		
ONLY DIRECTOR INFOS		
Director attributes :		
Director : Martin Feuerer Departmant : ACCOUNTING		
Salary : 7.000,00		
Director attributes :		
Director : Gero Beck Departmant : PRODUCTIVE		
Salary : 7.000,00		
	1 J 1	SAP

Figure 22: Output of Program

Here is the output of the program. Employees who has different experiences and positions have different salaries.

3.2. My and Others Work

The firm has different departments. Actually all departments are related form each other. SAP Basis Consultant should know Networking. Opeating System workers should now Networking. But firms' professinos is SAP Service.

3.3. Information Learned in School Applied in Training

Obejct-Oriented course in school it was useful for me because ABAP is an Object-Oriented Program. Without knowing Inheritance in Java I cant do my project.

Also Network classes helped me.I learned configurations, subnet masks, IP addresses at Network classes at school.

3.4. Problems Related to Computer Systems and Applications

I helped Martin Feurer about Wireshark problem. About) Analyse Tool and Traffic collecting tool. There are unnecessary IP addresses. I helped him how to analyses them.

Cascade Shark (Company: Riverbed) Analyse Tool and Traffic collecting tool.

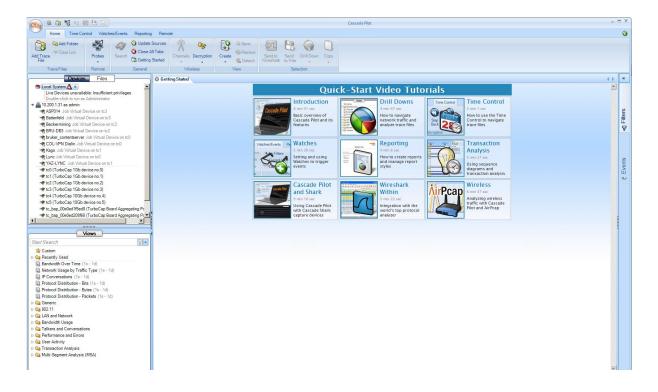


Figure 23:Interfaces of the Shark server This program about is the Server edition for Wireshark.

				Peak (last week):	0 К	0 K
Interfaces						
Interface	Description	Link Status	Received Packets			
tc0	TurboCap 1Gb device no.0	UP	34945836698			
tc1	TurboCap 1Gb device no.1	UP	50755695392			
tc2	TurboCap 1Gb device no.2	UP	14707433295			
tc3	TurboCap 1Gb device no.3	UP	49579865679			
tc4	TurboCap 10Gb device no.4	UP	203520289882			
tc5	TurboCap 10Gb device no.5	UP	89190985237			

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Figure 24: Status view

Here is the status of servers. We are finding for old servers and their IP and MAC Adresses.

()))))))))))))))))))))))))))))))))))))		Cascade Pilot	- = ×
Home Time Control Watches/Events Reporting Remote			0
Add Probes Select All Probes Frobes		ected	
Probe Management Probe Selection	Files View Selection		
Dovices Files State	d 💿 10.200.1.31 - Web Interface		4 Þ 🕊
ASP014 Job Virtual Device on tc3 Battenfed Job Virtual Device on tc3 Cascade Cascade		Hostname: ta001-rk1304 Version: 10.0 Uptime: 175 d 09:07:37	Fri, Jul 19, 2013 10:21 AM CEST A Logged in as: admin Logout
RU-DB3 Job Virtual Device on tc2 Status C	apture Jobs 🛛 Profiler Export 🛛 Interfaces 🖉 Settings 🗸 Sy		2
bruker_contentserver Job Virtual Device on tc0 COLVPN Dialin Job Virtual Device on tc0 Kago Job Virtual Device on tc1 Content Device on tc1 Content Device on tc0 Content Device on tc0 Content Device on tc0			▲ Fillers
	Status Packet Capture Size STOPPED 17.86 GB 3 STOPPED 12.16 GB 3 STOPPED 19.88 GB C STOPPED 2.58 MB IC STOPPED 1.40 GB IDIAIN STOPPED 1.40 GB IDIAIN STOPPED 1.60 GB IDIAIN STOPPED 1.60 GB IDIAIN STOPPED 1.60 GB		♠ Elverts
X Y System Views Status: Status: Status: Protocol Distribution - Byckets (Is - 16) Y Protocol Distribution - Packets (Is - 16) Y Y	Information System Packet Storage OK Status: OK 425.05 GB Total: 722 775 G6 (1.82%) Used: 410 d (Index): 198.68 GB (46.75%) Allocated (Jobs): 872	25 GB (5.51%) Available: 9.10 GB	
Call AN and Nervork Conversions Profiler Profile Profile	s Configured For Export s Status Info	Profiler Export Statistic Total (last minute): Total (last week): Avg per minute (last week) Peak (last week):	Exported Flows Rejected Flows 0 K 0 K 0 K 0 K
▷ ↓ \u03cm	ces Link Status Receive TurboCap 1Gb device no.0 UP 349458 TurboCap 1Gb device no.1 UP 507601 TurboCap 1Gb device no.2 UP 147074 TurboCap 1Gb device no.3 UP 495812	94729 57081 33387	

Figure 25: To define and check the jobs

Here you see, first we should define and check jobs.

1 C C C C C C C C C C C C C C C C C C C	-			Cascad	Pilot				
Home Time Control Watches/Events Reporting	g Remote	11							
🗧 🚳 🕥 🛈 Expand Selection	📓 📄 📎		Attach to Selected						
d Probes Select All O Collapse Selection	connect Web Import Files	Export Files Select All Close	E Detach from Selected						
sbe - Probes from	Selected Interface into Probes	from Probes on Probes Selected and	Share Selected with						
be Management Probe Selection	F	les View Se	lection						
Devices Files	Getting Started @ 10.200.1.	31 - Web Interface							4 Þ
10.200.1.31 as admin	riverbed			Hosto	me: ta00	1-rk120		Fri, Jul 19, 2013 10:21 AM CEST	*
ASP014 Job Virtual Device on tc3 Battenfeld Job Virtual Device on tc3	Cascade Shark				ion: 10.0	I INISO		Logged in as: admin Logout	
Batteneta Job Virtual Device on tc3 Beckermining Job Virtual Device on tc3	Lascade Shark				me: 175	100.08	18	cogged in ast defining -	
BRU-DB3 Job Virtual Device on tc2	Status Capture Jobs	Profiler Export Interfaces Se	ttings 🚽 System	-	ine. 175	109.00	10		
bruker contentserver Job Virtual Device on tc0									•
COL-VPN Dialin Job Virtual Device on tc0	Capture Jobs								
Kago Job Virtual Device on tc1	Capture Jobs								
S Lync Job Virtual Device on tc0	Capture Job Summa	ary							
RYAZ-LYNC Job Virtual Device on tc1	Job Name	Interface	Status Size		tions				
tc0 (TurboCap 1Gb device no.0)	JOD Name	Interface	Status Size						
tc1 (TurboCap 1Gb device no.1) tc2 (TurboCap 1Gb device no.2)	Lync	tc0 (TurboCap 1Gb device no.0)	STOPPED 17.8	GB E	dit Start	Clear	Remove		
tc2 (TurboCap TGb device no.2) tc3 (TurboCap 1Gb device no.3)					dit Start	0			
r tc4 (TurboCap 10Gb device no.5) r tc4 (TurboCap 10Gb device no.4)	BRU-DB3	tc2 (TurboCap 1Gb device no.2)) STOPPED 1.21	GB	dit Stan	Clear	Remove		
tc5 (TurboCap 10Gb device no.5)	hadre entrater	tc0 (TurboCap 1Gb device no.0)	CTOPPED 10.0	i cn	dit Start	Clear	Remove		
tc_bap_00e0ed1f5ed8 (TurboCap Board Aggregating Pc	bruker contentserver	tco (Turbocap 10b device no.o)) STOPPED 19.8	, 00					
tc_bap_00e0ed208f68 (TurboCap Board Aggregating Pc	ASP014	tc3 (TurboCap 1Gb device no.3)	STOPPED 2.58	MB E	dit Start	Clear	Remove		
🕈 tc_bap_00e0ed208f6a (TurboCap Board Aggregating Pc						Clear			
tc_tcap (TurboCap Aggregating Port)	YAZ-LYNC	tc1 (TurboCap 1Gb device no.1)) STOPPED 1.40	GB C	dit Start	Clear	Remove		
	COL-VPN Dialin	tc0 (TurboCap 1Gb device no.0)) RUNNING 164.)8 GB	iew Stop				
Views	Beckermining	tc3 (TurboCap 1Gb device no.3)	STOPPED 2.02	ca l	dit Start	Clear	Remove		
	- Deckermining	tes (furbocap 10b device no.5)	, STOPPED 3.93						
	Kago	tc1 (TurboCap 1Gb device no.1)	STOPPED 1003	.51 MB	dit Start	Clear	Remove		
Protocol Distribution - Bytes (1s - 1d)					iew Stop				
Protocol Distribution - Packets (1s - 1d) Generic	Battenfeld	tc3 (TurboCap 1Gb device no.3)) RUNNING 199.	88 GB	otop				
802.11	Add A New Job								
LAN and Network	10071100000								
Bandwidth Usage			Copyright © 20						
Talkers and Conversations			Copyright © 20	06 - 2012 F	iverbed Te	chnolog	y, Inc. All r	ghts reserved.	
Performance and Errors									
Performance and Errors Watches									
IP									
TCP									
Web									
VoIP									
SQL									
CIFS									
PCoIP									
Citrix									
User Activity									- 19

Figure 26: Creation of trace clip to analyze a specific time sequence

Here, we create a trace clip for analyzing a specific time sequence.

👞 @ # ¥ < 🗃 🕏]	Cascade Plot	_ = X
Home Time Control Watches/Events Reporting Remote		0
Probe - Probes from Selected Interface into	Probes from Probes Probes Selected Select Ni Crose Select Ni Select Ni	
Probe Management Probe Selection	Files View Selection]
Devices Files Started @ 1	1.200.1.31 - Web Interface 🔕 IP Conversations 🔕 😵 TCP Errors Overview	>> 4 b
V G Jobs Repository		*
⊳ 🍜 = ASP014 🕥 12.06 10:08:14 - 10:09:13, 2644,23 KE	🗐 🔍 jp.address-"10.251.21.198"	
Batterfeld Q 12.07 10.05 - 19.07 10.31, 199.99 G	1.4004859 10.201.21130	
▼ Sector in		End Point Bytes
25.06 9:46:26 - 9:47:13 (1024 MB)		End Point Bytes
	(A Transfilm X)	
₩ 25.06 9:46:26 - 9:48:18 (2303.99 MB)	Car Trace Clip X	
▼ 🕌 25.06 9:46:26 - 9:48:23 (2431.99 MB)	Description	
IP Conversations (09:50) Filter: TimeFilter "1372146386888609000, 1372		21,87M
Pitter: TimePitter: 1372 146306806050000, 1372 ▶ S ■ BRU-DB3 S 20.12.2012 14:18:56 - 14:21:21, 123	🔊 🖓 🔊 10 Seconds 30 Seconds 1 Minute 10 Minutes 🔊 🥥 🖓 🕄 Copy	21.87M
Broker_contentserver 0.03.04 10:58 - 04.04 12:2		Conversation Bytes
✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓ ✓	Begin Step Step End Begin Step Step End 1 Day 1 Week All History In Out	
	Back Forward 1 Day 1 Week All History In Out Pritters	21,87M
A 19.06 15:33:08 - 15:46:27 (128 MB)	Quick Navigstion Selection Duration Filter	21.87M
💑 19.06 15:33 - 20.06 10:01 (6,12 GB)		
As 19.06 15:33 - 20.06 14:18 (16,62 GB)	(15051533) 26.0615.33 03.0715.33 10.0715.33 17.07 (15.071033)	
💑 19.06 15:33 - 01.07 7:48 (42,76 GB)	29.79 d - Approx. size on storage: 164.14 GB	
30.06 11:05 - 14:05 (6,62 GB)	4D 29.79 d	
💌 💑 21.06 2:15 - 14:15 (9.01 GB)	Microflow Index and Packets (12.07 1:19 - 19.07 10:30)	
	Packets (19.06 15.33 - 12.07 1:19)	
	Timing Details	
Views	251.21.198	
top X •	From 19.06.2013 15:33:08:960521 To 19.07.2013 10:30:56.707063	
Grant TCP Errors Threshold For an IP Host (1s - 1d) - Filter: Uid	C For 23.18.57.47.746542	P III
High TCP Errors for a Host (Performance and Errors)Perfor		
Service Response Time for a TCP Server (1s - 1d) - Filter:		
Slow Service Response Time (Performance and Errors/Perf	OK Cancel	
TCP (Performance and Errors)		
TCP Timing Analysis by IP Conversation (1s - 1d) - Filter:		
TCP Timing Analysis by TCP Connection (1s - 1d) - Filter: TCP Window Size Over Time (1s - 1d) - Filter: TCP Traffic		
TCP Flags Distribution (1s - 1d) - Filter: TCP Traffic (Perfor		
TCP Errors (Performance and Errors)TCP)		
(ITCP Errors Overview (1s - 1d) - Filter: TCP Traffic (Perform		
TCP Errors Peers (1s - 1d) - Filter: TCP Traffic (Performan		
TCP Errors by Traffic Type (1s - 1d) - Filter: TCP Traffic (P		
Top TCP Error Sources and Destinations (1s - 1d) - Filter:		
TCP Connection Count (1s - 1d) - Filter: TCP Traffic (Perfo		
TCP Connection Summary by Result (1s - 1d) - Filter: TCF		
TCP Connections - Top Clients and Servers (1s - 1d) - Filte		
TCP Connection Summary by Direction and Traffic Type (1)	Notes	

Figure 27: In the trace clip, a lot of different analyze tools can be used, for example an overview of TCP Errors



Figure 28: The choosen traffic could be sent to wireshark for further analyses

Ed	t <u>V</u> iew <u>G</u> o	Capture Analyze Statistics	Telephony Tools Intern	als <u>H</u> elp				
		i 🖻 🖬 🗶 💋 🗄	3 0, 4 4 4 4	7 🕹 🗐	🖬 Q, Q, Q, 🖭 🎬 🔟 🥵	»» 🛛 🖬		
r:			•	Expression	Gear Apply			
	Time	Source	Destination	Protocol Ler		relative tim		deltaZeit
		10.3.209.218	10.251.21.198			SH, ACK] Seq=1 Ack=1 win=63720 Len=3 TSval-0.00000		0.000000
		10.3.209.218 10.251.21.198	10.251.21.198 10.3.209.218	TCP TCP		> citriximaclient [PSH, ACK] seq=1 Ack=1 v0.00000 CK] seg=1 Ack=4 win=64076 Len=0 Tsval=2532:0.19719	2013-07-19 10:13:26.825030 2013-07-19 10:13:27.022218	0.000002 0.197188
		10.251.21.198	10.3.209.218	TCP		aclient > 49479 [ACK] Seg=1 Ack=4 Win=6407(0.1971)		0.000002
		10.3.209.218	10.251.21.198	TCP		SH. ACK] Seg=4 Ack=1 win=63720 Len=3 TSval-3.7097		3.512564
6	3.709757	10.3.209.218	10.251.21.198	TCP	73 [TCP Retransmission] 49479	> citriximaclient [PSH, ACK] Seq=4 Ack=1 \3.7097	7 2013-07-19 10:13:30.534785	0.000001
7	3.902985	10.251.21.198	10.3.209.218	TCP		CK] Seq=1 Ack=7 win=64073 Len=0 TSval=2532:3.90298	85 2013-07-19 10:13:30.728013	0.193228
8	3.902987	10.251.21.198	10.3.209.218	TCP	70 [TCP Dup ACK 7#1] citrixim	aclient > 49479 [ACK] Seq=1 Ack=7 Win=6407:3.90298	37 2013-07-19 10:13:30.728015	0.000002
	4.821164	10.3.209.218	10.251.21.198 10.251.21.198	TCP		SH, ACK] Seq=7 ACK=1 win=63720 Len=14 TSVa'4.82110 > citriximaclient [PSH, ACK] Seg=7 Ack=1 V4.82110		0.918177
		10.3.209.218	10.251.21.198	TCP		SH, ACK] Seq=21 Ack=1 win=63720 Len=11 TSV:4.83389		0.012726
	4.833893	10.3.209.218	10.251.21.198	TCP		> citriximaclient [PSH, ACK] Seq=21 Ack=1 4.83389		0.000001
13	4.834449	10.251.21.198	10.3.209.218	TCP	70 citriximaclient > 49479 [A	CK] Seq=1 Ack=32 Win=64048 Len=0 TSval=253:4.83444	9 2013-07-19 10:13:31.659477	0.000556
	4.834450	10.251.21.198	10.3.209.218	TCP		maclient > 49479 [ACK] Seq=1 Ack=32 win=64(4.8344)		0.000001
		10.3.209.218	10.251.21.198	TCP TCP		SH, ACK] Seq=32 Ack=1 Win=63720 Len=13 TSV:4.84803		0.013580
	4.848032	10.3.209.218 10.3.209.218	10.251.21.198 10.251.21.198	TCP		SH, ACK] Seq=45 Ack=1 Win=63720 Len=11 TSV:4.86172		0.013692
	4.861724	10.3.209.218	10.251.21.198	TCP		SH, ACK] SEQ=45 ACK=1 WHI=03720 EEH=11 15004.0017. Citriximaclient [PSH, ACK] Seq=45 ACk=1 4.86177		0.000001
19	4.862250	10.251.21.198	10.3.209.218	TCP		CK] Seg=1 Ack=56 Win=64024 Len=0 TSval=25314.8622		0.000525
		10.251.21.198	10.3.209.218	TCP		maclient > 49479 [ACK] seq=1 Ack=56 win=64(4.8622)		0.000002
		10.251.21.198	10.3.209.218	TCP		SH, ACK] Seq=1 Ack=56 win=64024 Len=26 TSV:4.88510	0 2013-07-19 10:13:31.710188	0.022908
	4.885162	10.251.21.198	10.3.209.218 10.251.21.198	TCP	96 [TCP Retransmission] citri	ximaclient > 494/9 [PSH, ACK] Seq=1 Ack=56 4.88510	2013-07-19 10:13:31.710190 2013-07-19 10:13:31.715058	0.000002
	4.890030	10.3.209.218	10.251.21.198	TCP		SH, ACK] Seq=56 ACk=1 win=63720 Len=10 TSV:4.89003 Scientizimaclient [PSH, ACK] Seq=56 ACk=1 4,89003		0.004868
		10.3.209.218	10.251.21.198	TCP		SH, ACK] Seq=66 Ack=27 win=63694 Len=12 TS\4.90383		0.013804

Figure 29 : We found the old and unnecessary servers.

We defined IP addresses gap to 0-255. The program displayed us unused servers.

3.5. Teamwork Involved

I was taken away Datacenters in Frankfurt by the Network Team Leader Gero Beck and Operating Systems Team Leader Reiner Scherer. We went two Datacenters in Frankfurt. One of them is the biggest at that area. We did cabling in there and installed Transector into the Servers and configured.

3.6. Professional Issues and Work-Related Ethical Issues

Employees are respectful other departments work. But if SAP Consultants has a problem about Networking , he sends his problem via e- mail Networking Group. They help him.

I had a problem about Programming, had an error. I couldn't solve it. I called All-for-One Steeb Hamburg Development Department via Cisco Jabber.

3.7. Economic, Environmental, Societal and Global Impact of the Engineering Solutions Produced by Your Training Company

All for Automobile

All for Automotive is a package solution designed for small to mid-sized companies in the supplier and components industries, which is standardised and yet custom-tailored to specific business processes at the same time. Its compelling focus on unique industry requirements and features makes All for Automotive fully operational in the shortest possible time. And it takes little effort and expense to accommodate individual company wishes and specifications.

All for Automotive is specially developed for

- Shop fabricators
- Contract producers
- Series manufacturers
- Foundries
- Stamping, pressing and forming companies

All for Service

All for Service provides a platform on which all information about a project, a venture or a contract is readily available in a uniform structure. Thanks to the total integration of all service processes, user companies have complete information about projects and customers at their fingertips any time they need it.

All for Service Cockpit - Project Management at the Push of a Button

The All for Service Cockpit provides all the functions needed to control and manage projects on one intuitive workspace, which can be personalised and adapted to each individual user's needs through favourites, copy functions and hide/show options.

The All for Service Cockpit gives individual users greater confidence and security in using the system, letting them fully concentrate on their core business without being bothered with having to do time-consuming searches

All for Electric



Companies in the electrical engineering and electronics industry place many different demands on their business software:

- Future-proof software with the potential for ongoing process optimisation
- Support the development process for products, tools and assemblies
- Reduce cash-to-cash cycle times
- Optimise processing and cycle times
- Integrated document management
- Integrated quality management
- Integrated cost and performance accounting
- Reduce capital commitment in inventory assets

All for Electric is a package solution designed for small to mid-sized companies in the electrical engineering and electronics industry, which is standardised and yet custom-tailored to specific business processes at the same time. Its compelling focus on unique industry requirements and features makes All for Electric fully operational in the shortest possible. And it takes little effort and expense to accommodate individual company wishes and specifications.

All for Machine

All for Machine is a package solution designed for small to mid-sized companies in the machinery and equipment manufacturing industry, which is standardised and yet custom-tailored to specific business processes at the same time. Its compelling focus on unique industry requirements and features makes All for Machine fully operational in the shortest possible time. And it takes little effort and expense to accommodate individual company wishes and specifications.

All for Machine is specially developed for

- Project manufacturers
- Special-purpose machine makers
- Standard machine engineering firms
- Variant manufacturers
- Small-scale producers

All for Metal

All for Metal is a package solution designed for small to mid-sized companies in the metalworking industry, which is standardised and yet custom-tailored to specific business processes at the same time. Its compelling focus on unique industry requirements and features makes All for Metal fully operational in the shortest possible time. And it takes little effort and expense to accommodate individual company wishes and specifications.

All for Metal is specially developed for

- Shop fabricators
- Series manufacturers
- Contract manufacturers

and also covers all other manufacturing and production methods.

3.8. Self-Learning During Industrial Training

In programming department I learned ABAP by myself. I did applications by myself with ABAP documents helping.

At Networking Department I learned VoIP technology and configuration by myself. Helping with Ümüt Parlar.

Voice over Internet Protocol (**VoIP**) is a methodology and group of technologies for the delivery of <u>voice communications</u> and <u>multimedia</u> sessions over <u>Internet Protocol</u> (IP) networks, such as the Internet. Other terms commonly associated with VoIP are *IP telephony*, *Internet telephony*, *voice over broadband* (VoBB), *broadband telephony*, *IP communications*, and *broadband phone service*.

The term *Internet telephony* specifically refers to the provisioning of communications services (voice, <u>fax</u>, SMS, voice-messaging) over the public <u>Internet</u>, rather than via the <u>public</u> <u>switched telephone network</u> (PSTN). The steps and principles involved in originating VoIP telephone calls are similar to traditional digital <u>telephony</u>, and involve signaling, channel setup, digitization of the analog voice signals, and encoding. Instead of being transmitted over a circuit-switched network, however, the digital information is packetized and transmission occurs as <u>Internet Protocol</u> (IP) packets over a <u>packet-switched network</u>. Such transmission entails careful considerations about resource management different from <u>time-division multiplexing</u> (TDM) networks.

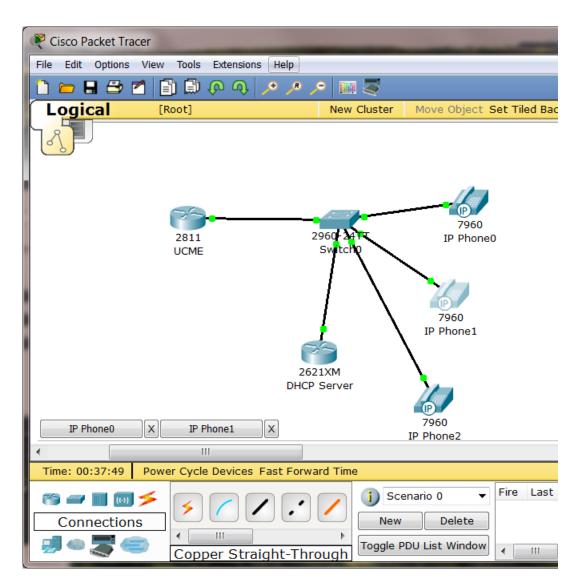


Figure 30: Configuration of VoIP Technology



Figure 31: Telephones connected

When we click on phones which are located in Packet Tracer, it shows us the condition of telephones, connected or not connected.

3.9. New Tools and Technologies Learned during Training

I joined SAP Basis team meeting. Thomas Stark who is the team leader of SAP Basis. He gave presentation about HANA Database.He said:'It is the future of SAP.We ought to prepare our systems towards HANA. We are going to send HANA Courses all SAP Basis team. I had general information about HANA during that team meeting. Also Mustafa Dönmez and Ümüt Parlar gave me a small course about Databases. Both of them told me HANA is the future of the Databases.

SAP HANA specialities:

At the core of the SAP HANA real-time platform is the SAP HANA database. Unlike other database management systems on the market today, the SAP HANA database processes both transactional and analytical workloads fully in-memory. By consolidating two landscapes (OLAP and OLTP) into a single database, you can benefit from a dramatically lower TCO – in addition to mind-blowing speed.

- Accelerate your core business processes and custom applications
- Eliminate the need to build traditional tuning structures, such as infocubes
- Report against transactional data in real time without delays caused by data replication

4. Conclusion

It was the different experience for me. I saw into working principle German firm especially what are their areas ,what their firsts. I learned different technologies which some of them are independent our curriculum. Exchange Server 2010, What does Citrix Farm means, ABAP Programming,How to I use and install NetWeaver

I improved my Network knowledge. I worked with real Cisco Routers and Switches. This knowledges are going to benefit next semester Networking courses.

It was a great chance for working foreign firm and a foreign country. I recommended this experience my mates.

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6. Appendix

I put source codes of my projects, some shots about what I did during my Summer Training, my other works on CD.

a) Creating Roomlist on Exchange Server 2012
b) Wireshark package Analyses
c)ABAP Programming Source Codes
d)VPN Source Codes
e)VoIP Source Codes