Application Note

ShoreTel[™]

ST-0122 October 9, 2006

Double-Take – ShoreWare Director Failover Configuration

The first step to deploying IP telephony in a secure manner is to follow the best practices in secure network design, and in today's world, this demands more than just a firewall between the LAN and the internet. Enterprises must design their network from the ground up with security in mind. Only with this solid footing can IP telephony be added to the network in a safe, secure manner.

Overview

Double-Take provides ShoreTel with the ability to have one active ShoreWare Server and another as a hot standby.

Software Versions

Double-Take: 4.4.1.0 Build: 4.4.0.1352.5 ShoreTel 5 Release 1.2 to ShoreTel 6.1

ShoreTel 6.1 Licensing

Customers running redundant servers leveraging Double-Take when they upgrade to 6.1 (with tighter license control), Will need to request a duplicate set of Feature Keys and System keys for the 2nd server. This is new with ShoreTel 6.1 since keys are now locked to the MAC address of the servers.

Process a customer/partner needs to request System keys for both systems (Primary and Backup). Order Management will issue a full set of keys for the 2nd server.

Configuration

Note: Two terms which are mentioned throughout this document are Source and Source is mentioned we are talking about the "Primary" server. Target represents the "Backup" server.

Build Two Windows Servers

- 1. Both systems must have all the required software for ShoreWare Director.
 - a. It's important that both servers be on the same network (Broadcast Domain). Example: 10.1.1.x / 255.255.255.0 contact your network administrator for further assistance if needed.
- 2. Install ShoreWare Director Software on both systems. Note: Must be same version of software!
 - a. On the "Target" system make sure all ShoreWare

"Services" are set to "Manual".

3. Install Double-Take software on both the "Source" and "Target" servers. Follow the instructions for the initial installation from Double-Take.

- a. Normally just accepting defaults during install should be okay.
- b.Reboot .

Double-Take Management Console "Base Setup"

- 1. Launch management console for both "Target" and "Source" system.
- 2. During initial launch of management console a prompt saying "Welcome to Double-Take" will be presented. Simply click "Cancel" (Figure 1).



Figure 1

- 3. Management Console "Options Configuration"
- a. From management console click "File | Options" (Figure 2)



Figure 2

b. From the "Management Console Options" window make sure the tab for "Configuration" is selected (Figure 3)

Site Monitor	
Check Status Interval (sec):	30 🕂
Missed Status Responses:	2 +
Connection Monitor	
Missed Status Responses:	5 🕂
Network	
Communication Timeout	30 🕂
StatusTransmit Port:	1105 🕂
✓ Use ICMP to verify server availability	
Automatic Service Discovery:	
🔽 Active Directory Advertisement	
🔽 Heartbeat Advertisement	
Port: 1100 🛨	
File Listings (Maximum entries displayed)	
	2500

Figure 3

c. Go to the "Network" area and change the "Status Transmit Port" value to 8005 (Figure 4).



Figure 4

d. Next go to "Automatic Service Discovery" and make sure "Heartbeat Advertisement is checked and the port used is 8000 (Figure 5).



- 4. Management Console "Failover Control Center"a. From the Double-Take Management Console select "Tools | Failover Control Center..." (Figure 6)
- 5. Click "OK" to complete.



Figure 6

a. From Failover Control Center click "Settings | Communications..." (Figure 7).

itored Ma	Add Target
	Login
	Add Monitor
	Remove Monitor
	Edit Monitor
	Update Shares
	Failover
	Failback

Figure 7

b. The "Set Communications Parameters" window will be displayed. Change the Service and Heartbeat ports both to "8000" (Figure 8) followed by clicking "OK".

et Communication	is Paran	neters	>
Service Transmit Por	t	8000	•
Heartbeat Listen Por	t:	8000	-
0	ĸ	Cancel	



c. At this point all windows on both the "Source" and "Target" should be closed with the exception of the "Double-Take Management Console".

Windows Server "Services" Configuration

Open "Services" for both the "Target" and "Source" windows server:

a. Normally done by clicking "Start | Programs | Administrative Tools and then Services".



1. Restart Double-Take Service on "Source" system.

ollo					,,
🏶 Double-Take 🚽	Common of Common		Started	Automatic	LocalSystem
Event Log	Start	Logs event	Started	Automatic	LocalSystem
🖏 Fax Service	Stop	Helps you		Manual	LocalSystem
File Replication	Pause	Maintains fi		Manual	LocalSystem
FTP Publishing Se	Resume	Provides F	Started	Automatic	LocalSystem
IIS Admin Service	Restart	Allows adm	Started	Automatic	LocalSystem
a Indexing Service	All Tooke			Manual	LocalSystem

2. Restart ShoreWare Software Telephone Software on "Source" system.

ShoreWare Software Telephony Switch 💦 📊	The Softs	Started	Automatic	LocalSystem
ShoreWare Telephony Management Server	Start	 Started	Automatic	LocalSystem
ShoreWare Voice Mail Application	Stop .	 Started	Automatic	LocalSystem
ShoreWare Voice Mail Message Server	Pause	 Started	Automatic	LocalSystem
ShoreWare Voice Mail Port Manager	Resume	 Started	Automatic	LocalSystem
ShoreWare Workgroup Server	Restart	 Started	Automatic	LocalSystem
Ba Carela Mail Turners of Dusharal (CMTD)	···- · · ·	Charlend	Automotic	LevelCustors

3. Start ShoreWare Software Telephony Switch on the "Target" system.

ShoreWare IP-Phone Display Service ShoreWare Notification Server ShoreWare Port Mapper		Controls the display and advanced feat Notifies ShoreTel application services of Manages the registration ports for ONC
ShoreWare Software Telephony Switch ShoreWare Telephony Management Serve ShoreWare Voice Mail Application ShoreWare Voice Mail Message Server ShoreWare Voice Mail Port Manager ShoreWare Workgroup Server	<u>Start</u> Stop k Pa <u>u</u> se Resu <u>m</u> e Restart	The SoftSwitch hosts call endpoints for The telephony platform for ShoreWare Voicemail services provide user mailbox Voicemail services provide user mailbox Voicemail services provide user mailbox Manages configured Workgroups, Que

4. Restart Double-Take service on "Target" system.

ollo					
💑 Double-Take 🗖			Started	Automatic	LocalSystem
Event Log	Start	Logs event	Started	Automatic	LocalSystem
Fax Service	Stop	Helps you		Manual	LocalSystem
File Replication	Pause	Maintains fi		Manual	LocalSystem
FTP Publishing Se	Resume	Provides F	Started	Automatic	LocalSystem
IIS Admin Service	Restart	Allows adm	Started	Automatic	LocalSystem
Sa Indevina Service	All Tacks			Manual	LocalSystem

5. Stop the ShoreWare Port Mapper service on "Target" system.

ShoreWare Port Mapper	SESPE	Manages t	Started	Automatic	LocalSystem
ShoreWare Software Telephony S ShoreWare Telephony Managemer ShoreWare Voice Mail Application ShoreWare Voice Mail Message Se	Stop Pause Resume	The SoftS The teleph Voicemail s Voicemail s	Started Started Started Started	Automatic Automatic Automatic Automatic	LocalSystem LocalSystem LocalSystem LocalSystem

6. Stop the ShoreWare Software Telephony Switch on "Target" system.

ShoreWare Port Mapper	Manages t	Started	Automatic	LocalSystem
ShoreWare Software Telephony Switch	Chaut	Started	Automatic	LocalSystem
ShoreWare Telephony Management Server ShoreWare Voice Mail Application ShoreWare Voice Mail Message Server	Stop Pause Resume	5tarted 5tarted 5tarted	Automatic Automatic Automatic	LocalSystem LocalSystem LocalSystem
ShoreWare Workgroup Server	Restart	Started	Automatic	LocalSystem

Double-Take Management Console "Main Configuration"

Launch Double-Take Management Console, select the following "Start | Programs | Double-Take" followed by "Management Console.



Note Repeat steps 1 – 4 for both the "Source" and "Target" systems.

1. Right click on server being modified (Source or Target) and click "Logon...".



2. Logon prompt will be presented, compete login.

	Username:	Administrator
	Password:	l I
	Domain:	FERBARI
▼ S	ave Password	OK Cancel

3. Right click on the server name and select "Properties"

dellxpst600: Source & Targe	et	
Double-Take Server	rs d Servers	Replical
🛨 🕵 🤤 cellaration	<u>R</u> efresh	
	Re <u>m</u> ove	
	Hide	
	Logon	
	Log <u>o</u> ut	
	Shutdown	
	Pause <u>T</u> arget	
	Resume Target	
	New	•
	Properties	
_		

4. "Server Properties window will be presented, click on the tab named "Network" and change the "Status Listen Port" to "8005". Next click "OK".

Target Databas	se l Logging	E-mail	Notification
General Setup	Network		Source
Changing the values Double-Take service	s on this page will no e has been restarted	ot take effect un d on the specifie	til the d system.
Interface			
Default <u>A</u> ddress:		None	
Default <u>P</u> rotocol:		TCP/IP	Ŧ
Service Listen Port:		8000	- -
Heartbeat Transmit Port:		8000	3
St <u>a</u> tus Listen Port:		8005	-
Heartbeat			
Time between Heartbeat	ts (seconds):	3 .]
<u>M</u> issed Heartbeat Limit:		10 -]
		1	

Open "Services" for both the "Target" and "Source" windows server:

1. Normally done by clicking "Start | Programs | Administrative Tools and then Services".

	Windows Update							
I.	WinZip							
	Programs	- 3	B	Accessories	×	ľ		
			r,	Administrative Tools	×	6	Component	Services
	Documents	•	(iii)	Double-Take	×	*	Services	N
Fh	Settings		B	Network Associates	×		×	hà
NAAN Y	Decangs	S.	<u>ج</u>	ShoreTel	×			
	Search	•	(SnagIt 6	×			
2	Help		() ()	WinZip Windows Journal Viewer	•			
7	Run			¥	_			
	Shut Down							

2. Restart Double-Take and ShoreWare SoftSwitch service for both the "Target" and "Source" servers.

Replication Setup

From the "Double-Take Management Console".

1. Right click on "Source" server and click "Logon...".



2. Logon prompt will be presented, compete login.

Logon to	b dellxpst600	Administrator	
y	Password:		
	Domain:	FERRARI	_
⊽ Sa	ave Password	OK	Cancel

3. On the "Source" server right click and select "New" and then "Replication Set"



- 4. Give the replication set a "name"
- 5. Select the "Shoreline Data" (<drive letter>\Shoreline data) file from the "Source" system. Check the box for the folder.



6. Right click the replication set and select "save".

Connection Manager	
<u>A</u> dd Device	
Undo	
Save	
Delete ^{NS}	
Properties	

7. Select the "Replication Set" again and select "Connection Manager..."



- 8. The new window will display the "Connection Manager". Choose the "Servers" tab.
 - a. Select the "Source Server" from the drop down.
 - b. Select the "Target Server" from the drop down.

Revers Mirroring Transmit Verity	t Target Server and Boute Define the
destination paths and connection opt	ions.
Source Server:	Replication Set:
ferrari 💌	ShoreBackup 💌
🔜 Target Server:	Route:
▼	·
dellxpst600 ferrari Diagnostics	
Mappings 📀 All To One	🔿 One To One
Source Path	Target Path
Start Mirror on connection	😤 🔽 Start Replication on connection

9. Once complete the mappings will show the path to both the "Source" and "Target" system. And click "Connect". **Note:** Must select "root" of directory for where "Shoreline Data" file is located.

🚊 Source Servi	er:	Replication Set:
ferrari	•	ShoreBackup
🗐 Target Serve	er:	Route:
dellxpst600	•	10.5.0.28 : 8000
1appings	All To One	C One To One
1appings Source Path	All To One	C One To One Target Path
1appings Source Path I:\	All To One	C One To One Target Path CN

10. Management Console will now display the information on the "replication set" for both the "Source" and "Target". Wait for the "mirror status" to complete and state "idle or 100%"



11. Verify mirroring by opening "Windows Explorer" for both the "Source" and "Target" system. Next compare data files such as call records or shoreware.mdb. Look at the size and date type information. The files should have the same information.

Setting up "Failover Scripts"

1. From the Management Console of Double-Take select "Tools | Failover Control Center"

Source & Target To Connection Manager Bestoration	e View Monitor Insert Tools Help					Land Lands
Bestoration Manager Bestoration Manager Double Take Servers Connection Witcert Connection Witcert	Connection Manager					
Jourde Taiger Image: Name Target Name Target Name Target Name Mile Hord Status Status <t< td=""><td>Restoration Manager</td><td></td><td></td><td></td><td></td><td></td></t<>	Restoration Manager					
Double inder Servers	Eallover Control Center					
Image: Source (Target/	Double-Take Servers	prinection ID Target N	iame Target IP Target Statu	IS Iransmit Mode Mirror 5ta	tus Replication Status	112 000 444
former	Addebiscovered be Connection Wizard	deiixpstt	00 //10.5 UK	Started Idle	кеаду	112,808,446
C - NTFS) Blake Foundation modowniki tmp Shoreline Data C - NTFS) D DATA (0: - N	🖃 🙀 🗖 ferrari					
	😟 🚍 (C: - NTFS)					
Bible Foundation Bible Foundation System Volume Information System Volume Information D DATA (D: - NTFS) D DATA (D: - NTFS) RECYCLER System Volume Inform WUTemp V Shoreline Data System Volume Inform VUTemp	🖻 💷 DATA (D: - NTFS)					
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Shoreine Uata System Volume Information WUTemp Gotta (Co. NTFS) Gotta (Co. NTFS) Gotta (Co. NTFS) Gotta (Co. NTFS) WUTemp WUTemp WUTemp Soytem Volume Infor Soytem Volume Inf						
System Volume and matching System Volume Inform System Volume Inform WUTemp System Volume Inform Surce_Target	E Sustan Values Tefermation					
ShoreBackup C(-: NFS) DotA (0: - NFS) DotA (0: - NFS) DotBale Foundation ECYCLER DotS Solveine Data Solveine Value Inforr WUTemp VUTemp Course Target	System volume information					
Current Center Center (Carton Center						
Dota (0:-frtfs) Balae Foundation modownid trap System Volume Infor WUTemp WUTemp Source_Target						
Bale Foundation RecYCLER Sobreine Data Sobreine Data Sobreine Torr WUTemp VUTemp Source Target	🖻 🗹 😜 DATA (D: - NTFS)					
	😟 – 🗔 🧰 Blake Foundation					
	— 🗔 🚞 msdownld.tmp					
Source Target	🕀 🗔 🧰 RECYCLER					
System Volume Inforr	🗷 🗹 🧰 Shoreline Data					
WUTemp Source (Target /	— 🛄 System Volume Inforr					
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	h Faile an Castral Castra					[el]

- 2. Select the "Target" machine from the drop down.
 - a. Click "Login" and complete
 - b. Then click "Add Monitor..."

Add Target
Login
Add Monitor
Remove Monitor
Edit Monitor
Update Shares
Failover
Failback

3. From the "Select Machine" window click on the "Source" server.

WORKGROUP		OK
Machine Name ALIEN FERRAR	Source No Yes	

4. From the "Monitor Settings" page confirm the following:

a. "Items to failover" are checked for IP Address, Server Name and Shares

b. Manual Intervention is unchecked Note: Not required by ShoreTel

Note: Make sure the "Current IP Address" field displays current Target server IP address. If blank or incorrect IP Address "highlight" the IP address field in "Names to Monitor" and click "Target Adapter" drop down and select the correct adapter!

Names to Monitor:	Target Adapter:	
🖃 🗹 💻 FERRARI	[3] 3Com EtherLink 10/100 PC	1 For Complete PC Management NIC (3C905 💌
IP 10.5.0.13	Method to Monitor for Failover:	
	Network Access (ICMP)	
	Monitor Interval: 5	Current IP Address(es):
	Missed Packets: 5	
	Failover Trigger All Monitored IP Addresse Dine Monitored IP Addresse	(0 IP Placeholders) s Fail s Fails
	Failover Method C Add Source Identity to Ta C Replace Target Identity w	nget rith Source
	Items to Failover ✓ IP Address(es) ✓ Monitored ≪ All	Manual Intervention Use .SHR Share Mapping File (If Available) Active Directory:
	Server Name	Failover Hostname

5. Create a text file on the target server called "startservices.bat".

a. Content for "startservices.bat"

rem ***Startup script for DoubleTake failover process*** rem ***This script starts all ShoreTel services as part of the DOubleTake failover process***
net start "ShoreWare Account Code Collection Server" net start "ShoreWare Call Accounting" net start "ShoreWare CSIS Server" net start "ShoreWare Database Management Service" net start "ShoreWare Director Utilities" net start "ShoreWare Distributed Routing Service" net start "ShoreWare Distributed Telephony Application Service" net start "ShoreWare Event Watch Server" net start "ShoreWare IP-Phone Configuration Service" net start "ShoreWare IP-Phone Configuration Service" net start "ShoreWare IP-Phone Display Service" net start "ShoreWare IP-Phone Display Service" net start "ShoreWare Software Telephony Switch" net start "ShoreWare Telephony Management Server" net start "ShoreWare Telephony Management Server" net start "ShoreWare Telephony Management Server" net start "ShoreWare Voice Mail Application" net start "ShoreWare Voice Mail Application"

6. Click on "Scripts" button (above image) the Scripts window will be displayed.

- a. Un-check both boxes "Delay failover until script completes" and "Delay failback until script completes".
- b. Set the Post-Failover file to the "startservices.bat" file created in step 5.
- c. Click OK

Pre-Failover:		
Delay failover until script Post-Failover:	completes	
C:\startservices.bat		
Pre-Failback:		
and a second		
Delay failback until script	completes	
Post-Failback:		N
Post-Failback:		k
Post-Failback:		
Post-Failback: Gource		
Post-Failback: Source Post-Failback:		
Post-Failback: Jource Post-Failback:		
Post-Failback: Source Post-Failback:		
Post-Failback: Gource Post-Failback: Make these scripts defaults	for future monitor sessions	

7. Click OK on the Monitor Settings window.

Fallback Process

Once a Failover has occurred, and the reason for the failover has been resolved, then it is time to plan for a fallback back to SOURCE. This process must be planned during an off-hours timeframe to minimize the impact to end users. The fallback process takes 20 to 30 minutes to complete.

Note: The SOURCE server must be disconnected from the network prior to initiating the fallback process.

- 1. Stop all ShoreWare services on SOURCE.
- 2. Stop all ShoreWare services on Target server.
- 3. Shut Down the ShoreWare Com+ application on Target server (Start > Programs > Administrative Tools > Component Services > Local Computer > Select ShoreWare > Right click to shut down.).
- 4. Open the Failover Manager on Target server and click the Fallback button. When the "Fallback Complete" message appears, reconnect SOURCE to the network.
- 5. When the "Continue Monitoring?" window appears, select Stop to disable active failover monitoring.
- 6. Open the DoubleTake Management Console. Select the ShoreTel replication set and right click to select "Disconnect".
- 7. Open the DoubleTake Restoration Manager and select a restore from Target server to SOURCE. The system will now copy the new ShoreWare files back onto SOURCE so it is up to date. This process takes ~20 minutes. You will know the process has completed when the Restoration Replication set disappears from the Management Console.
- 8. Restart both servers. SOURCE will now come fully back online and active.
- 9. Log into the DoubleTake Management console and restart the previously disconnected ShoreWare replication set. This will re-initiate the mirror process from SOURCE to Target server. Wait for the mirror process to be completed.
- 10. Log into the Failover Manager and restart the failover monitor of SOURCE to Target server.

