Oracle® Communications Diameter Signaling Router

IPv6 Migration Guide

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Oracle® Communications DSR IPv6 Migration Guide

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See more information on MOS in Appendix H: My oracle support (MOS)

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1.0 INTRODUCTION

1.1 PURPOSE

This document contains guidelines and describes an example procedure for the DSR that completes the migration of a system of servers configured with only IPv4 network addresses to IPv6 network addresses.

The purpose is to provide a techincal reference to internal and external ententies for migrating DSR topologies from IPv4 only topologies to IPv6 topologies.

1.2 REFERENCES

- [1] IPv6 Migration Procedure and Guidelines, E54704
- [2] Software Installation and Configuration Procedure Part 2/2, E58954
- [3] Hardware and Software Installation Procedure Part 1/2. E57789
- [4] 5.x/6.x/7.x Network Interconnect Topology 1: L3 Agg. TR007133
- [5] Communication Agent, E63636

1.3 ACRONYMS

A list of acronyms used in the document:

Acronym	Definition
DP	Data Processor Blade
DSR	Diameter Signalling Router
HA	High Availability
IDIH	Integrated Diameter Intelligent Hub
IMI	Internal Management Interface
IPv4	Internet Protocol version 4
IPv6	Internet Protocol version 6
IWF	InterWorking Function
NOAM	Network OAM
SOAM	System OAM
NE	Network Entity
NTP	Network Time Protocol
SOAP	Simple Object Access Protocol
SDS	Subscriber Data Server
TPD	Tekelec Platform Distribution
XML	Extensible Markup Language

1.4 TERMINOLOGY

Multiple server types may be involved with the procedures in this manual. Therefore, most steps in the written procedures begin with the name or type of server to which the step applies. For example:

Each step has a checkbox for every command within the step that the technician should check to keep track of the progress of the procedure.

•	The title box describes Each comm	s the operations to be performed during that step. and that the technician is to enter is in 10 point bold Courier font.
5	ServerX: Connect to	Establish a connection to the server using cu on the terminal server/console.
	the console of the	
	server	\$ cu –l /dev/ttyS7[←]

2.0 SUMMARY OF PROCEDURE

2.1 IPV6 MIGRATION STRATEGY

To ensure a successful application IPv6 migration, carefully plan and assess all configuration materials and installation variables. After a customer NAPD has been conducted, an installer can use this section to plan the exact procedure list that should be executed at each site.

The following list summarizes this process.

- 1) An overall IPv6 migration requirement is established. Data that should be collected:
 - The total number of sites to be migrated
 - The number of servers at each site and their role(s)
 - Determine whether the application's networking interface terminates on a Layer 2 or Layer 3 boundary
 - Establish the number of enclosures at each site (*if any*)
 - Determine if the application uses rack-mount servers or server blades
- A NAPD is conducted to determine exact networking and site details. Additionally, IP networking options must be well understood, and IP address allocations collected from the customer, in order to complete switch configurations
- 3) Although complete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not required.

2.2 HIGH LEVEL FUNCTIONAL DESCRIPTION

The scenario for migration covered in this example document is to duplicate the existing configuration of IPv4 networks in a 3-tier DSR/SDS/iDIH topology with a parallel configuration of IPv6 networks. Each DSR/SDS/iDIH server in the topology will have new IPv6 interfaces configured on the server, and the various services using the networks will be transitioned from the IPv4 networks to the IPv6 networks.

In order to initiate a controlled switch-over of all DSR/SDS services to IPv6 networks, a service effecting NTP Sync of the server(s) is required.

Note: For IPv6 migration on cloud deployments, skip to section 3.2.1

Note: The *"recovery"*, or *"harvesting"* of existing IPv4 addresses on the application servers is not covered by this document at this time. That feature has been reconciled to a future DSR release and will be addressed in that release with modifications to this document or creation of a new migration procedure.

2.2.1 Assumptions and Limitations

- 1. All servers at all sites are running the same version of DSR/SDS/iDIH 7.1 or greater. The migration process is separate from a software upgrade and will not to be included as part of a software upgrade.
- 2. The entire topology is running with no alarms currently raised on any of the servers in the topology. Any problems raising an alarm must be addressed before undertaking a migration to IPv6 addressing.
- 3. This document addresses the migration of DSR/SDS/iDIH servers in a topology from IPv4 to IPv6 networks. Several components of this migration will reference documents to achieve the IPv6 migration of various components throughout this procedure.
- 4. HP G6 and HP G7 do not support IPv6 for OA/iLO interfaces. Those interfaces may continue to use Routable IPv4 addresses.
- 5. Cisco 3020 does not support IPv6 for its management interface. That interface may continue to use Routable IPv4 addresses.
- 6. HP 6125G and Cisco 4948E-F do not support NTP over IPv6. Therefore IPv4 may be used for NTP service on these two switches.
- 7. HP 6120XG does not support remote syslog over IPv6. Therefore, remote syslog may use IPv4 for HP 6120XG switch.
- 8. IPv6 support on some of the HP hardware components depends on the firmware version running on the components. It is expected that the HP hardware shall be upgraded to appropriate firmware level in order to utilize this feature.
- 9. For SBR replication network migration, it is important to note that the replication networks will continue to use IPv4 communication until both sides (each Network Element Site) have been migrated to IPv6.
- 10. IPv6 migration (and backout) is to be performed on a physical site at a time, this includes geo redundant topologies where DSR SOAM spares are present.

2.2.2 Time Estimates

The following shows an example timeline and procedure overview for a single c7000 enclosure and one RMS. Containing a 3-tier DSR topology with two network elements -2 NOAM servers, 2 SOAM servers, 2 MP, and 2 DP servers.

Procedure	Phase	Elapse Time (Minute	d es)
		This Step	Cum.
Procedure 1	Gathering New and Existing Network and Server Data	45	45
Procedure 2	Configure All System Switches	30	75
Procedure 3	Configure Management Server TVOE and iLO/iLOM (DSR ONLY)	30	95
Procedure 4	Configure TVOE and iLO on Additional Rack Mount Servers	30	125
Procedure 5	Configure Enclosure OA/iLO	30	155
Procedure 6	Configure PMAC (DSR ONLY)	40	195
Procedure 7	Verify, Backup, and Complete platform Configurations (DSR ONLY)	20	215
Procedure 8	Add the New IPv6 Networks: NOAM	20	235
Procedure 9	Add the New XMI/IMI IPv6 Interfaces to the NOAM servers	10	245
Procedure 10	Add the New IPv6 Network Routes: NOAM	10	255
Procedure 11	Add the New IPv6 NTP Servers: NOAM	10	265
Procedure 12	Add the New IPv6 VIP for the NOAM Servers.	15	280
Procedure 13	Switch the NOAM Servers Over to IPv6 Network Usage.	25	310
Procedure 14	Modify SNMP Managers IP Addresses (Optional)	5	315
Procedure 15	Modify Customer DNS Configuration (Optional)	10	325
Procedure 16	Modify LDAP Configuration (Optional)	20	345
Procedure 17	Modify Export Server IP Addresses: NOAM (Optional)	20	365
Procedure 18	Perform IPv6 Migration on DR-NOAMs (Repeat Procedures 1-18)	365	730
Procedure 19	Configure the SOAM Blade TVOE Hosts for IPv6	20	750
Procedure 20	Add the New IPv6 Networks: SOAM NE Site	20	770
Procedure 21	Add the New XMI/IMI IPv6 Interfaces to the SOAM servers	5	775
Procedure 22	Add the New IPv6 Network Routes: SOAM	5	780
Procedure 23	Add the New IPv6 NTP Servers: SOAM	5	785
Procedure 24	Add the New IPv6 VIP for the SOAM Servers.	5	790
Procedure 25	Add the New XMI/IMI IPv6 Interfaces to the MP/DP servers	5	795
Procedure 26	Add the New IPv6 Network Routes: MP/DP Servers	10	805
Procedure 27	Add the New IPv6 NTP Servers: MP/DP Servers	5	810
Procedure 28	Switch the SOAM Over to IPv6 Network Usage.	5	820
Procedure 29	Switch the MP/DP Servers Over to IPv6 Network Usage.	25	845
Procedure 30	Inter-IPFE Synchronization Configuration for IPv6 (Optional)	20	865

Table 1: Installation Overview/Estimated Time Elapsed

Procedure	Phase	Elapse Time (Minut	d es)
		This Step	Cum.
Procedure 31	Modify Export Server IP Addresses: SOAM	20	885
Procedure 32	Configure IPv6 Remote Server Connections (DSR + SDS)	20	905
Procedure 33	Add the New IPv6 Networks: iDIH	35	940

Table 1: Installation Overview/Estimated Time Elapsed

Overall length of time to execute a migration is highly dependent on the number of DSR servers in the topology. A 3-tier topology containing two Network Elements - 2 NOAMP servers, 2 SOAM servers, and 2 MP servers, it is possible to complete the migration in 1 hour to 2 hours, not counting any pre-migration procedures like switch, OA/iLO, TVOE, and PMAC configuration.

3.0 PROCEDURES

3.1 PRE-MIGRATION PROCEDURES

This section describes the procedures that must be executed in preparation for the migration procedures.

Procedure 1: Gathering New and Existing Network and Server Data

S T	This procedure describes gathering the necessary data to proceed with migration.		
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	Gather all existing	Using the customer NAPD document as a guide, and working with site personnel, gather all	
	network and server data	the existing system network and server data for all servers, including existing IPv4 networks, netmasks, VLAN Ids, routes, and the IPv4 addresses for every interface on every server.	
		Gather all requried user Ids and passwords requried for migration of DSR and external servers (export servers, SNMP servers, and LDAP servers)	
2	Determine all new network and server data	Using the customer NAPD document as a guide, and working with site personnel, determine all the new system network and server data for all servers that will be needed, including new IPv6 networks, netmasks, routes, and the IPv6 addresses for every interface on every server.	
		Note: It is important that all the new IPv6 networks entered into the DSR GUI have the same network names as the existing IPv4 networks (<i>i.e XMI,IMI</i>)	
		Note: For VLAN-tagged interfaces, VLAN Ids should be the same for an IPv6 network that is replacing an IPv4 network (<i>i.e XMI</i> , <i>IMI</i>)	

Procedure 2: Configure All System Switches

S T	This procedure describes the configuration of all system switches for new IPv6 networks.		
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	Configure all	Execute Configure Network Devices from [1] to configure all enclosure and aggregation	
	system switches	switches for the new IPv6 DSR OAM networks.	
	for IPv6 networks	For Topology 1, if all Layer 3 IPv6 interfaces on the aggregation switches have not already	
		been configured, follow Appendix G : XMI configuration on aggregation switches (Topology	
		1 only), Otherwise continue to the next step.	

Procedure 3: Configure Management Server TVOE and iLO (DSR ONLY)

S T E P	This procedure describ RMS iLO/iLOM. This shares the same TVOE	bes the configuration of the management server TVOE host as well as the management server procedure also contains steps to configure the OAM networks where the NOAM server E Host as the PMAC server.
#	Note: This step is not	applicable to SDS deployments
	Check off $()$ each step as it	is completed. Boxes have been provided for this purpose under each step number.
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
1	Management Server: Configure the TVOE Host and iLO for IPv6 networks	Execute <i>Configure Management Server (Steps 1-22)</i> from [1] to configure the management server TVOE host and iLO for any new IPv6 networks.
2	Management TVOE Server: Configure IPv6 for SNMP and NTP	Execute Appendix F : TVOE Host SNMP and NTP IPv6 Configuration to configure IPv6 for SNMP and NTP on the TVOE server.
3	Additional Rack Mount Servers: Configure Additional Routes if needed	Add additional routes, if needed: Example: \$ sudo netAdm add routeroute=netdevice= <bridge name=""> address=2001:1::netmask=96gateway=fe80::99</bridge>
3	Backup TVOE Configuration	Execute Appendix E : Backup tvoe Configuration to back up the TVOE configuration after IPv6 configuration.

Procedure 4: Configure TVOE and iLO on Additional Rack Mount Servers

S	This procedure describes the configuration of TVOE hosts and iLOs on additional servers. This procedure also			
Т	contains steps to configure the OAM networks on the TVOE hosts for DSR deployments only.			
Е				
Р	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
#	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.			
1				
1	Additional Rack	Execute Configure Management Server from [1] to configure the rack mount server's		
	Mount Servers:	TVOE host, management interface, default route, and iLO for any new IPv6 networks.		
	Configure the TVOE			
	Host and iLO for	Notes For SDS deployments where TVOE is NOT deployed use this step to configure the		
	IPv6 networks	Note: For SDS deployments where TVOE is NOT deployed, use this step to comfigure the		
		1LO for the applicable rack mount servers.		
2	Additional Deek	Evecute Annendix F: TVOE Host SNMP and NTP IPv6 Configuration to configure IPv6		
	Auuluonal Nack	EXecute Appendix F. 1 VOE most signification in vo configuration to configure in vo		
	Mount Servers:	for SNMP and NTP on the TVOE/TPD server.		
	Mount Servers: Configure IPv6 for	for SNMP and NTP on the TVOE/TPD server.		
	Mount Servers: Configure IPv6 for SNMP and NTP	for SNMP and NTP on the TVOE/TPD server.		
2	Mount Servers: Configure IPv6 for SNMP and NTP Additional Rack	for SNMP and NTP on the TVOE/TPD server.		
2 3	Aduitional RackMount Servers:Configure IPv6 forSNMP and NTPAdditional RackMount Servers:	Add additional routes, if needed:		
2 3 □	Mount Servers: Configure IPv6 for SNMP and NTP Additional Rack Mount Servers: Configure	Add additional routes, if needed: Example:		
2 3 	Mount Servers: Configure IPv6 for SNMP and NTP Additional Rack Mount Servers: Configure Additional Poutes if	Add additional routes, if needed: Example: \$ sudo netAdm add routeroute=netdevice= <bridge name=""></bridge>		
3	Aduitional RackMount Servers:Configure IPv6 forSNMP and NTPAdditional RackMount Servers:ConfigureAdditional Routes ifmanded	Add additional routes, if needed: Example: \$ sudo netAdm add routeroute=netdevice= <bridge name=""> address=2001:1::netmask=96gateway=fe80::99</bridge>		
3	Additional RackMount Servers:Configure IPv6 forSNMP and NTPAdditional RackMount Servers:ConfigureAdditional Routes ifneeded	Add additional routes, if needed: Example: \$ sudo netAdm add routeroute=netdevice= <bridge name=""> address=2001:1::netmask=96gateway=fe80::99</bridge>		
2 3 	Aduitional RackMount Servers:Configure IPv6 forSNMP and NTPAdditional RackMount Servers:ConfigureAdditional Routes ifneededBackup TVOE	Add additional routes, if needed: \$ sudo netAdm add routeroute=netdevice= <bridge name=""> address=2001:1::netmask=96gateway=fe80::99 Execute Appendix E: Backup type Configuration to back up the TVOE configuration</bridge>		
	Aduitional RackMount Servers:Configure IPv6 forSNMP and NTPAdditional RackMount Servers:ConfigureAdditional Routes ifneededBackup TVOEConfiguration	Add additional routes, if needed: \$ sudo netAdm add routeroute=netdevice= <bridge name=""> address=2001:1::netmask=96gateway=fe80::99 Execute Appendix E: Backup tvoe Configuration to back up the TVOE configuration after IPv6 configuration.</bridge>		

Procedure 5: Configure Enclosure OA/iLO

S T E P #	This procedure describes the configuration of all enclosure OA/iLO for IPv6 dual stack. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
1	Configure all Enclosure OAs for IPv6 networks	Execute <i>Configure Enclosures</i> from [1] to configure all enclosure OAs for any new IPv6 networks.

Procedure 6: Configure PMAC

S T	This procedure describes the configuration of the PMAC server for IPv6		
E P	Note: This step is not applicable to SDS deployments		
#	Check off (\mathbf{v}) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	Configure PMAC	Execute <i>Reconfigure PM&C</i> from [1] to configure the PMAC server for any new IPv6	
	server for IPv6	networks.	
	networks		

Procedure 7: Verify, Backup, and Complete platform Configurations

S	This procedure describe	bes the verification, backup, and completion of platform configurations.
T	Note: This step is not a	applicable to SDS deployments
P	Check off $()$ each step as it	is completed. Boxes have been provided for this purpose under each step number.
#	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
1	Verify, Backup, and Complete Platform Migration	Execute <i>Finish Migration</i> from [1] to verify, backup and complete the platform Ipv6 configurations.

The system should be ready for migration of all the application servers in the DSR/SDS topology.

3.2 MIGRATION PROCEDURES

This section describes the procedures that must be executed to migrate all DSR/SDS servers in a topology from IPv4 to IPv6 networks.

3.2.1 NOAM Migration

This section describes the procedures that must be executed on the NOAM to migrate the NOAM servers from IPv4 to IPv6 networks.

Procedure 8: Add the New IPv6 Networks: NOAM NE

S	This procedure will provide the instructions how to add the new IPv6 networks.		
T E	Check off (\mathbf{v}) each step as it is completed. Boxes have been provided for this purpose under each step number.		
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as guiadmin user.	
2	NOAM VIP: Insert an IPv6 network	Insert the new IPv6 networks for the NOAM and Query servers by following the steps in Appendix A: Add the New IPv6 Networks.	
		Note: Enter the IPv6 networks for the NOAM NE only, SOAM networks will be added at a later time.	

Procedure 9: Add the New XMI/IMI IPv6 addresses to the NOAM & Query Servers

S T P #	This procedure will provide the procedure will provide the procedure of t	ovide the instructions how to add the new IPv6 interfaces on NOAM and Query servers. ete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not is completed. Boxes have been provided for this purpose under each step number. CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.

Procedure 9: Add the New XMI/IMI IPv6 addresses to the NOAM & Query Servers

S T E P #	 This procedure will provide the instructions how to add the new IPv6 interfaces on NOAM and Query servers. Note: Although complete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not required Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 	
2	NOAM VIP: Unlock the IPv4 Networks	Unlock the IPv4 networks so that new IPv6 interfaces with the same VLAN Id as existing IPv4 interface can be added. Navigate to the Main Menu → Configuration → Network Select the one or more IPv4 networks that are being duplicated by IPv6 networks. Select the Unlock button at the bottom of the page. Insett Edt Unlock Delete Report A Confirmation dialog box will pop up. Select "check to confirm" and then select OK to continue. Your browser session will remain on the Main Menu → Configuration → Network page and in the grid you will see the networks are now unlocked.

Procedure 9: Add the New XMI/IMI IPv6 addresses to the NOAM & Query Servers

S	This procedure will pro	e will provide the instructions how to add the new IPv6 interfaces on NOAM and Query servers.			
Т Е Р #	Note: Although compl required	igh complete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not			
	Check off (\mathbf{v}) each step as it	is completed. Boxes ha	we been provided for this put	rpose under each step number.	
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
3	NOAM VIP: Insert	rt Execute this step to insert an IPv6 addressed device interface.			
	IPv6 Interface	Navigate to the M	Iain Menu → Configu	$ration \rightarrow Network \rightarrow \Gamma$	Devices
		Select the XMI or etc.)	r IMI (<i>if required</i>) inter	face (i.e XMI bridge inte	erface, bond0.237, bond1,
		Select the tab for	the first NOAM server	to have IPv6 interfaces a	ndded.
		Select the Edit bu form.	atton at the bottom of the	ne page. The GUI will sh	ow the "Devices [Edit]"
		General Options	MII Monitoring Options	ARP Monitoring Options	IP Interfaces
		Field	Value	Desc	cription
		Device Type	⊙Bonding ©Vlan ⊙Alias	Select the device type. It cann created. [Default = N/A. Range	ot be changed after device is e = Bonding, Vlan, Alias.]
		Device Monitoring	Monitoring Type 💌	Choose a monitoring style to Disabled for non-bonding dev MII, ARP.]	use with a bonding device. vices. [Default = MII. Options =
		Start On Boot	Enable	Start the device, and also star	t on boot. [Default = enabled]
		Boot Protocol	None 🔻	Select the boot protocol. [Defa None,DHCP]	ault = None, Range =
		Base Device(s)	□control □imi □xmi	The base device(s) for Bondir Alias and Vlan devices requir- require 2 selections. It cannot created. [Default = N/A. Range device type.]	ng, Alias and Vlan device types. e 1 selection; Bonding devices t be changed after device is e = available base devices per
		In the form, selec	t the IP Interfaces tab		
		• Select th	e Add Row button,		
		• Enter the IPv6 address and select the IPv6 Network Name. Select Ok button to commit the form.			ne.
4	NOAM VIP: Insert Remaining IPv6 Network Interfaces	Repeat steps 3 ab	ove to insert IPv6 netw	vork interfaces on the 2nd	NOAM and Query Server

This procedure will provide the instructions how to add the new IPv6 XMI network route. S Т Е Note: Not all installations will require additional routes. Execute this procedure if data gathered in Procedure 1 Р indicates that IPv6 routes are needed. For example, routes would be required between IPv6 networks in different # Network Elements. Check off ($\sqrt{}$) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 1 NOAM VIP: Establish a GUI session on the NOAM server, login as guiadmin user. Establish GUI Session 2 NOAM VIP: Insert Execute steps listed in Appendix B: Configure New IPv6 Network Routes to add the XMI XMI IPv6 Route IPv6 route. Note: Server Group routes may be added as an alternative to individual server routes.

Procedure 11: Add the New IPv6 NTP Servers: NOAM& Query Servers

S T P #	 This procedure will provide the instructions how to add the new IPv6 NTP servers. Note: This procedure if data gathered in Procedure 1 indicates that IPv6-addressed NTP servers are needed. WARNING: Do NOT execute a "NTP Sync" from the Main Menu → Status&Manage → Server at this time. The NTP Sync action is service-effecting - doing so will temporarily stop DSR processes, as well as restart the NTP daemon. Since an NTP Sync will take place in Procedure 13, NTP changes will take effect at that time. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 		
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.	
2	NOAM VIP: Insert the IPv6 NTP Servers	Execute the steps in Appendix C : Add the New IPv6 NTP Servers to add NTP server(s) with IPv6 address.	

Procedure 12: Add the New IPv6 VIP for the NOAM NE

S	This procedure will provide the instructions how to add the new IPv6 VIPs for NOAM and Query Servers			
T F	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.			
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.		
2	NOAM VIP: Add	Execute this step to add an IPv6 VIP, if needed.		
	an IPv6 VIP for the NOAM Server	Navigate to the Main Menu → Configuration → Server Groups .		
	Group	Select the NOAM server group.		
Select the Edit button at the bottom of the page. The GUI will show the " <i>Ser Edit</i> " form.				
		VIP Assignment		
	VIP Address Add			
	Remove			
		10.240.47.68 Remove		
		Ok Apply Cancel		
		Enter any new IPv6 VIPs using the data gathered in Procedure 1		
		Enter any new in volvin's using the data gathered in Frocedure 1.		
		Select the Add button to create a new blank VIP Address text box		
		Enter the IPv6 VIP address.		
		Select Ok button to commit the form.		

S T F	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the NOAM and Query servers.		
P #	WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.		
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP: Establish SSH Session	Establish an SSH session on the NOAM server, login as <i>admusr</i> user.	

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the NOAM and Query servers.			
E P #	WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.			
	Note: Do not execute t configured, and, if need have been added.	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S. CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
2	NOAM VIP: Verify			
	IPv4 usage	Verify services are currently using IPv4:		
		\$ sudo proctcpstat		
		Example output (Output shortened for display purposes):		
		cmha (IPv4)		
		::1:17402 ==> ::1:45460		
		$\frac{169.254.2.5}{169.254.2.4}:59861 = => \frac{169.254.2.4}{17401}:$		
		::1:17402 ==> ::1:45461		
	::ffff:10.240.108.5:17401 ==> ::ffff:10.240.108.4:50368			
		::1:17402 ==> ::1:45471		
		$10.240.108.5:56128 \Longrightarrow 10.240.108.4:17401$		
		::1:17402 ==> ::1:45459		
		::ffff:169.254.2.5:17401 ==> ::ffff:169.254.2.4:48811		
		cmsoapa		
		::1:45462 ==> ::1:17402		
		inetmerge (IPv4)		
		$\frac{169.254.2.5}{169.254.2.4}:16878$		
		$::ffff:169.254.2.5:16878 \Longrightarrow ::ffff:169.254.2.4:46701$		
		::1:45471 ==> ::1:17402		
		169.254.2.5:55785 ==> 169.254.2.7:16878		
		$\frac{169.254.2.5}{36744} = > \frac{169.254.2.8}{16878} = 16878$		
		inetrep (IPv4)		
		$\frac{169.254.2.5}{53874} = => \frac{169.254.2.10}{17402}$		
		::1:45459 ==> ::1:17402		
		$\frac{169.254.2.5}{63825} = \frac{169.254.2.8}{169.254.2.8} = \frac{169.254.2.8}{169.2} = \frac{169.2}{169.2} $		
		::::::::::::::::::::::::::::::::::::		

S T	S This procedure will provide the instructions how to switch all configured services to IPv6 networks by per an NTP Sync the NOAM and Query servers.			
E P #	WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service affecting action and should be performed in a maintenance window.			
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
3	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.		
4	NOAM VIP: Lock Networks	After adding networks in, lock all networks(IPv4 & IPv6) now that all IPv6 interfaces have been added.		
		Navigate to the Main Menu → Configuration → Network		
		Select the network or networks to lock.		
		Select the Lock button at the bottom of the page.		
		Insert Edit Lock Delete Report		
	A " <i>Confirm</i> " dialog box will pop up. Select " <i>check to confirm</i> " and then sel continue.			
		Your browser session will be taken back to the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the network(s) maked as " <i>Locked=Yes</i> ".		
	l			
5	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA		
	role to Forced	Click Edit		
	Standby	Edit		
		Set the "Max Allowed HA Role" of the Active NOAM to Standby		
		Max Allowed HA Role		
		Standby -		
		Note: A switch-over will occur, where the formerly standby NOAM server will become the active server. You will be logged out of the browser GUI.		
		Login again to the NOAM VIP as guiadmin user.		

S T	This procedure will pro an NTP Sync the NOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M and Query servers.		
E P #	WARNING: In order affecting action and sh	er for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service- should be performed in a maintenance window.		
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
6	NOAM VIP:	Navigate to the Main Menu → Status&Manage → Server		
	Perform "NTP Sync" on the	Select the standby NOAM server.		
	Standby NOAM	Select the NTP Sync button at the bottom of the page.		
		Stop Restart Reboot NTP Sync Report		
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.		
		Note: The stopping and starting of the application software during the NTP sync is the mechanism used to migrate from IPv4 to IPv6.		
7	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA		
	Query HA role to	Click Edit		
	Active	Edit		
		Set the "Max Allowed HA Role" of the standby NOAM to Active		
		Active -		
		Wait for Merging and replication related alarms to clear before proceeding.		
		Repeat this step for the Query Server (if equiped)		

S T	This procedure will pro an NTP Sync the NOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M and Query servers.	
E P #	WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.		
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
8	NOAM VIP: Set the Active NOAM HA role to Forced Standby	Navigate to the Main Menu → Status&Manage → HA Click Edit Edit	
		Set the "Max Allowed HA Role" of the now Active NOAM to Standby Max Allowed HA Role	
		Note: Again, a switch-over will occur, where the formally standby NOAMP server will become the active server. You will be logged out of the browser GUI. Login again to the NOAM VIP as <i>guiadmin</i> user.	
9	NOAM VIP:	For the now active (formerly in-active) NOAM server	
	Perform an "NTP Sync" on the now	Navigate to the Main Menu → Status&Manage → Server	
	standby NOAM	Select the standby NOAM server.	
	Server	Select the NTP Sync button at the bottom of the page.	
		Stop Restart Reboot NTP Sync Report	
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.	
		Note: While performing an NTP sync of the server doesn't nessesarily switch services from IPv4 to IPv6, it does bounce the IP connections to switch to IPv6.	
		Wait for Merging and replication related alarms to clear before proceeding.	

S T	This procedure will pro an NTP Sync the NOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M and Query servers.		
E P #	 WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a serv affecting action and should be performed in a maintenance window. 			
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
10	NOAM VIP: Set the	Navigate to the Main Menu → Status&Manage → HA		
	standby NOAM HA			
	role to Active	Click Edit		
		Edit		
		Set the "Max Allowed HA Role" of the standby NOAM to Active		
		Active -		

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the NOAM and Query servers.				
E P #	WARNING: In order for the new IPv6 network changes to take effect, an NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.				
	Note: Do not execute the procedure in this section until all NOAM and Query Server IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.				
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS	S. CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
11	NOAM VIP: Verify				
	IPv6 usage	Verify services are currently using IPv6:			
		\$ sudo proctcpstat			
		Example output (Output shortened for display purposes):			
		cmha (IPv6)			
		fd02::83:17402 ==> fd02::81:50469			
		::1:17402 ==> ::1:36133			
		fd02::83:17402 ==> $fd02::82$:51303			
		::1:17402 ==> ::1:36132			
		::1:17402 ==> ::1:36135			
		cmsoapa			
		::1:36132 ==> ::1:17402			
		inetmerge (IPv6)			
		::1:36134 ==> ::1:17402			
		fd02::83:16878 ==> fd02::82:49023			
		td02::83:168/8 ==> td02::81:34308			
		inetrep (IPv6) $(102.92,5804.6)$ $(102.94,17402)$			
		1002::85:58040 ==> 1002::84:17402			
		100285.1/400 ==> 100281 .39880			
		vinmor			
		::1:36135 ==> ::1:17402			

Procedure 14: Modify SNMP Managers IP Addresses (Optional)

S	This procedure details	the steps to modify the SNMP Manag	er IP addresses.
Т Е #	 Note: If, during the data gathering in Procedure 1, it is determined that new IPv6 addresses for external SNMP manager(s) are to be used, then execute this procedure. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. 		
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle supp	OFT (MOS) AND ASK FOR ASSISTANCE.
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOA	M server, login as <i>guiadmin</i> user.
2	NOAM VIP: Modify the SNMP Manager(s)	Navigate to the Main Menu → Adn Manager 1	ninistration → Remote Servers → SNMP Trapping
		Manager 2	
		Manager 3	
		Manager 4	
		Manager 5	
		Using the SNMP Manager data gathe the SNMP Managers in the Manager Scroll down and select Ok button to	ered in Procedure 1, enter the new IPv6 addresses for text fields in the form. commit the form.

Procedure 15: Modify Customer DNS Configuration (Optional)

S T E	This procedure details the steps to modify the DNS server IP addresses.		
P #	DNS server(s) are to be used, then execute this procedure.		
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.	
	Session		

Procedure 15: Modify Customer DNS Configuration (Optional)

S T	This procedure details	the steps to mod	ify the DNS server IP addresses.	
E P #	Note: If, during the da DNS server(s) are to b	ta gathering in P e used, then exec	rocedure 1, it is determined that ne cute this procedure.	w IPv6 addresses for external customer
	Check off ($$) each step as it	is completed. Boxes	have been provided for this purpose under ea	ich step number.
	IF THIS PROCEDURE FAIL	5, CONTACT Apper	ndix H: My oracle support (MOS) AN	D ASK FOR ASSISTANCE.
2	NOAM VIP:	Navigate to the	Main Menu \rightarrow Administration \rightarrow	Remote Servers → DNS
	Modify the customer	Configuration		
	DNS server(s)	Using the custo	omer DNS server data gathered in Pr	cocedure 1, enter the new IPv6 addresses
		for the custome	er DNS servers in the address text fie	lds in the form.
		System Domain		
		System Domain	Domain Name	Description
		Domain	500lab.com	System Domain Name. (e.g. yourdomain.com) [Ma
		External DNS Name	e Server	
			Address	Description
		Name Server	10.250.51.116	Address of external DNS name server. [Must be a va
		Domain Search Or	der	
			Pomain Name	Description
		Search Domain 1	500lab.com	A valid domain name. [May only contain alphnumer
		Search Domain 2	platform.cgbu.us.oracle.com	A valid domain name. [May only contain alphnumer
		Search Domain 3	labs.tekelec.com	A valid domain name. [May only contain alphnumer
		Search Domain 4	labs.nc.tekelec.com	A valid domain name. [May only contain alphnumer
		Search Domain 5		A valid domain name. [May only contain alphnumer
		Search Domain 6		A valid domain name. [May only contain alphnumer
				Ok Cancel
		Scroll down an	d select Ok button to commit the for	m.

Procedure 16: Modify LDAP Configuration (Optional)

S T E P #	This procedure details the steps to modify the LDAP server IP addresses. Note: If, during the data gathering in Procedure 1 , it is determined that new IPv6 addresses for external LDAP server(s) are to be used, then execute this procedure.		
	Check off ($$) each step as it IF THIS PROCEDURE FAILS	is completed. Boxes have been provided for this purpose under each step number.	
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.	

Procedure 16: Modify LDAP Configuration (Optional)

S	This procedure details	the steps to modify the LD	AP server IP addresses	
T	This procedure details	the steps to mourry the LD	An server in addresses.	
E P #	Note: If, during the date server(s) are to be used	ta gathering in Procedure d, then execute this procedu	1, it is determined that new IPv6 addresses for external LDAP ire.	
	Check off ($$) each step as it	t is completed. Boxes have been p	rovided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: M	y oracle support (MOS) and ask for assistance.	
2	Modify the LDAP	Navigate to the Main Me	enu \rightarrow Administration \rightarrow Remote Servers \rightarrow LDAP	
	server(s)	Authentication		
		Select the Insert button a	the bottom of the page to access the Insert form.	
				Unic
		Hostname	^	unic alph
				an a
		Account Domain Name		strir
		Account Domain Name Short		The OR/
				Port
		Port	389	betv
		Base DN	· · · · · · · · · · · · · · · · · · ·	Dire
		Username		Use
		Password		The setti
		Account Filter Format		Use
			OTraditional (e.g., guest)	iong
		Account Canonical Form	Backslash (e.g., ORACLE\guest) E-Mail (e.g., quest@oracle.com) *	Forr
		Referrals	Follow	Whe
		Bind Requires DN	Enabled	Whe
			Ok Ap	
				-7
		Using the customer LDA or hostname for the LDA	P server data gathered in Procedure 1, enter the new IPv6 addre P server in the form.	esses
		Scroll down and select O	k button to commit the form.	

Procedure 17: Modify Export Server IP Addresses: NOAM (Optional)

S T	This procedure details the steps to modify the export server IP addresses.		
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.	
	Establish GUI		
	Session		
2	NOAM VIP:	Modify the Export Server addresses by executing the steps in Appendix E:	
	Modify the Export		
	Server address		

3.2.2 DR-NOAM Migration

This section describes the procedures that must be executed on the NOAM to migrate the DR-NOAM servers from IPv4 to IPv6 networks.

Procedure 18: Perform IPv6 Migration on DR-NOAM and Query Servers

S T	This procedure details the steps to migrate the DR-NOAM and Query Servers to IPv6			
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
P #	IF THIS PROCEDURE FAILS	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
1	DR-NOAM Repeat Procedures 1-19 to migrate the DR-NOAMs to IPv6.			
		Note: For IPv6 migration on cloud deployments, skip to section 3.2.3 procedure 20.		

3.2.3 SOAM NE Site Migration

This section describes the procedures that must be executed on the TVOE host and SOAM to migrate site SOAM and MP/DP servers (*within the same Network Element*) from IPv4 to IPv6 networks.

Procedure 19: Configure the SOAM Blade TVOE Hosts for IPv6

S T	This procedure details the steps to configure TVOE servers for IPv6 networks		
E P	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
#	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	TVOE Server: SSH to the TVOE Blade	Establish an SSH terminal session to the TVOE blade server. Login as <i>admusr</i> .	
	Server	Note: For IPv6 migration on cloud deployments, skip to procedure 20.	
2	TVOE Server: Add the XMI IPv6	Using the data gathered in Procedure 1, enter the new IPv6 address for the XMI bridge inteface using the following command:	
	address.	<pre>\$ sudo netAdm settype=Bridgename=<xmi>address=<ipv6_address>netmask=<ipv6_prefix></ipv6_prefix></ipv6_address></xmi></pre>	
3	TVOE Server: Verify Dual-Stack	Both the old IPv4 and new IPv6 address should be displayed after entering the following command:	
		<pre>\$ sudo netAdm querytype=Bridgename=<xmi></xmi></pre>	
4	TVOE Server: Add	<pre>\$ sudo netAdm settype=Bridgename=<netbackup> </netbackup></pre>	
	the Netbackup IPv6 address (Ontional)	address=<1pv6_address>netmask=<1pv6_pref1x>	
5	TVOE Server: Verify Dual-Stack.	Both the old IPv4 and new IPv6 address should be displayed after entering the following command:	
		<pre>\$ sudo netAdm querytype=Bridgename=<netbackup></netbackup></pre>	

Procedure 19: Configure the SOAM Blade TVOE Hosts for IPv6

S T	This procedure details the steps to configure TVOE servers for IPv6 networks		
E P	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
#	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
6	TVOE Server:	Set the default route:	
	default route	<pre>\$ sudo netAdm add routeroute=defaultdevice=<xmi> gateway=<xmi_ipv6_gateway></xmi_ipv6_gateway></xmi></pre>	
7	TVOE Server:	Add additional routes, if needed:	
	Configure additional routes (Ontional)	Example:	
	(optional)	<pre>\$ sudo netAdm add routeroute=netdevice=netbackup address=<netbackup address="" tpv6=""></netbackup></pre>	
		netmask= <netbackup_ipv6_netmask></netbackup_ipv6_netmask>	
		gateway= <netbackup_ipv6_gateway></netbackup_ipv6_gateway>	
8	TVOE Server: Varify Poutos	To verify the routes, the ip command, or preferably ping6 may be used.	
	Verify Koules	\$ ip -6 route	
		<pre>\$ ping6 -c 3 <ipv6_gateway></ipv6_gateway></pre>	
		Note: If the gateway is a link local address, an interface must be provided	
		<pre>\$ ping6 -I xmi <link local_ipv6_gateway=""/></pre>	
9	TVOE Server:	Execute Appendix F: TVOE Host SNMP and NTP IPv6 Configuration to configure IPv6 for	
	Configure IPv6 for SNMP and NTP.	SNMP and NTP on the TVOE blades.	
10	TVOE Server:	Repeat Steps 1-14 for the 2 nd SOAM TVOE Host.	
	SOAM Server		
11	1 Backup TVOE Execute Appendix E: Backup tvoe Configuration to back up the TVOE configuration after IPv6 configuration.		

Procedure 20: Add the New IPv6 Networks: SOAM NE Site

S T P #	 This procedure will provide the instructions how to add the new IPv6 networks. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 	
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.
2	NOAM VIP: Insert an IPv6 network	Insert the new IPv6 networks for the SOAM server by following the steps in Appendix A : Add the New IPv6 Networks.
		Note: If this site contains an SBR replication network (PCA Only), add it at this time following the above referenced Appendix.
Procedure 21: Add the New IPv6 Networks: SOAM NE Site

S	This procedure will pr	ovide the instructions how to add the new IPv6 interfaces on both SOAM servers.		
T E P	Note: Although complete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not required			
#	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP: Establish GUI	Establish a GUI session on the NOAM server, login as guiadmin user.		
	Session			
2	NOAM VIP: Unlock the IPv4 Networks	Unlock the IPv4 networks so that new IPv6 interfaces with the same VLAN Id as existing IPv4 interface can be added. Navigate to the Main Menu → Configuration → Network Select the one or more IPv4 networks that are being duplicated by IPv6 networks. Select the Unlock button at the bottom of the page.		
		A Confirmation dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.		
		Your browser session will remain on the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the networks are now unlocked.		

Procedure 21: Add the New IPv6 Networks: SOAM NE Site

S	This procedure will pro-	ovide t	he instru	ctions how to add the new IPv6 interfaces on both SOAM servers.
I E P	Note: Although compl required	ete IPv	/6 migrat	ion is supported, IPv6 migration of the IMI (non-routable) network is not
#	Check off ($$) each step as it	is comp	leted. Boxe	es have been provided for this purpose under each step number.
	IF THIS PROCEDURE FAILS	CONT		PODIX H: My oracle support (MOS) and ask for assistance
		,	ion ippo	
3	NOAM VIP: Add a	Exec	ute this st	tep to add a VLAN tagged IPv6 address to an existing device interface.
	IPv6 Interface	Navig	gate to th	e Main Menu \rightarrow Configuration \rightarrow Network \rightarrow Devices.
		Selec	t the tab	for the first SOAM server to have IPv6 interfaces added.
		Now addin	select the	e Device Name that corresponds to the VLAN Id of the network you are
		Selec form.	t the Edi	t button at the bottom of the page. The GUI will show the "Devices Edit"
		General Option	s MII Monitoring Options	ARP Monitoring Options IP Interfaces
		Field	Value	Description
		Device Type	Ethernet Bonding Vian Alias	Select the device type. It cannot be changed after device is created. [Default = NA. Range = Bionding, Vian, Alias]
		Device Monitorin	g Monitoring Type	Choose a monitoring style to use with a bonding device. Disabled for non-bonding devices. (Default = MIL Options = MIL ARP)
		Start On Boot	Enable	Start the device, and also start on boot. [Default = enabled]
		Boot Protocol	None -	Select the boot protocol.[Default=None, Range = None,DHCP]
		Base Device(s)	Limi Smi	The base device(s) for Bonding, Alias and Vian device types. Alias and Vian devices require 1 selection; Bonding devices require 2 selections. It cannot be changed after device is created. [Default = NA Range = available base devices per device type]
		In the	e form, se	elect the IP Interfaces tab.
		Selec	t the Add	d Row button to get an empty row in which to enter the new IPv6 address.
		Enter	the IPv6	network interface IP address data gathered in Procedure 1.
			•]	The IPv6 address corresponding to the network,
			• 5	Select the network name for the IPv6 network
		Selec	t Ok but	ton to commit the form.
4	NOAM VIP: Insert Remaining IPv6 Network Interfaces	Repe	at step 3	to insert IPv6 network interfaces on the 2nd SOAM.

Procedure 22: Add the New IPv6 Network Routes: SOAM

S This procedure will provide the instructions how to add the new IPv6 network routes for the SOAM Networks Т Е Note: Not all installations will require additional routes. Execute this procedure if data gathered in Procedure 1 Р indicates that IPv6 routes are needed. For example, routes would be required between IPv6 networks in different # Network Elements. Check off ($\sqrt{}$) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 1 NOAM VIP: Establish a GUI session on the NOAM server, login as guiadmin user. Establish GUI Session 2 NOAM VIP: Insert Execute steps listed in **Appendix B**: Configure New IPv6 Network Routes to add an IPv6 an IPv6 Route route, if needed.

Procedure 23: Add the New IPv6 NTP Servers: SOAM

S T	This procedure will pro	ovide the instructions how to add the new IPv6 NTP servers to the SOAM servers		
E P #	Note: Not all installations will require new NTP servers to be added to each Server. Execute this procedure if data gathered in Procedure 1 indicates that IPv6-addressed NTP servers are needed.			
"	WARNING: Do <i>NOT</i> execute a " <i>NTP Sync</i> " from the Main Menu \rightarrow Status&Manage \rightarrow Server at this time. The NTP Sync action is service-effecting - doing so will temporarily stop DSR processes, as well as restart the NTP daemon. NTP changes will take place in Procedure 28.			
	Check off (\mathbf{i}) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	If this procedure fails, contact Appendix H: My oracle support (MOS) and ask for assistance.			
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.		
	Establish GUI Session			
2	NOAM VIP: Insert	Execute the steps in Appendix C: Add the New IPv6 NTP Servers to add NTP server(s)		
	the IPv6 NTP Servers	with IPv6 address, if needed.		

S	This procedure will provide the instructions how to add the new IPv6 VIPs for SOAM servers.					
T E	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
Р #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.					
1	NOAM VIP: Establish CLU	Establish a GUI session on the NOAM server, login as guiadmin user.				
	Session					
2	NOAM VIP: Add	Execute this step to add an IPv6 VIP, if needed.				
	an IPv6 VIP for the SOAM Server	Navigate to the Main Menu → Configuration → Server Groups .				
	Group	Select the SOAM server group.				
		Select the Edit button at the bottom of the page. The GUI will show the " <i>Server Groups Edit</i> " form				
		VIP Assignment				
		VIP Address Add				
		Remove				
		10.240.47.68 Remove				
		Ok Apply Cancel				
		Enter any new IPv6 VIPs using the data gathered in Procedure 1				
		Select the Add button to create a new blank VIP Address text box,				
		Enter the IPv6 VIP address.				
		Select Ok button to commit the form.				

Procedure 24: Add the New IPv6 VIP for the SOAM Servers.

S T E	This procedure will pro MP, IPFE, SDS DP)	ovide the instr	ructions how to	o add the new IPv6 interfaces on all MP servers (DA-MP, SS7-		
P #	Note: Although compl required	ete IPv6 migr	ete IPv6 migration is supported, IPv6 migration of the IMI (non-routable) network is not			
	Check off ($$) each step as it	is completed. Bo	oxes have been pro	ovided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	5, CONTACT AP	pendix H: My	oracle support (MOS) and ask for assistance.		
1	NOAM VIP: Establish GUI Session	Establish a G	JUI session or	n the NOAM server, login as <i>guiadmin</i> user.		
2	NOAM VIP: Add a	Execute this	step to add a	VLAN tagged IPv6 address to an existing device interface.		
	VLAN Tagged IPv6	Navigate to	the Main Mer	$\mathbf{u} \rightarrow \mathbf{Configuration} \rightarrow \mathbf{Network} \rightarrow \mathbf{Devices}.$		
	Interface	Select the ta	b for the first I	MP server to have IPv6 interfaces added.		
		Now select 1	the Device Na	me that corresponds to the VLAN Id of the network you are		
	ļ	adding.				
		Select the E form.	dit button at th	he bottom of the page. The GUI will show the "Devices Edit"		
		General Options	MII Monitoring Option	ARP Monitoring Options IP Interfaces		
	1	Field	Value C Ethernet	Description		
		Device Type	C Bonding Vlan C Alias	Select the device type. It cannot be changed after device is created. [Default = N/A. Range = Bonding, Vlan, Alias.]		
		Device Monitoring	Monitoring Type 🔻	Choose a monitoring style to use with a bonding device. Disabled for non-bonding devices. [Default = MII. Options = MII, ARP.]		
		Start On Boot	Enable	Start the device, and also start on boot. [Default = enabled]		
	ļ	Boot Protocol	None 👻	Select the boot protocol. [Default = None, Range = None, DHCP]		
		Base Device(s)	bond0 bond0.174 bond0.175 bond0.175 bond1.176 bond1.177 eth01 eth02 eth12 eth12 eth21 eth22	The base device(s) for Bonding, Alias and Vlan device types. Alias and Vlan devices require 1 selection; Bonding devices require 2 selections. It cannot be changed after device is created. [Default = N/A. Range = available base devices per device type.]		
		In the form,	select the IP I	nterfaces tab.		
		Select the A	dd Row butto	n to get an empty row in which to enter the new IPv6 address.		
		Enter the IP	v6 network int	erface IP address data gathered in Procedure 1		
		•	The IPv6 add	lress corresponding to the VLAN tagged network,		
		•	Select the ne	twork name for the IPv6 network		
		Select Ok b	utton to comm	it the form.		
3	NOAM VIP: Repeat	Repeat step	2 for addition	al MP/DP servers.		
	For Additional MP/DP Servers.					

Procedure 25: Add the New XMI/IMI IPv6 Interfaces to the MP/DP servers

Procedure 26: Add the New IPv6 Network Routes: MP/DP Servers

S T	This procedure will provide the instructions how to add the new IPv6 network routes for the MP servers				
E P #	Note: Not all installations will require additional routes. Execute this procedure if data gathered in Procedure 1 indicates that IPv6 routes are needed. For example, routes would be required between IPv6 networks in different Network Elements.				
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS, CONTACT Appendix 11. My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.			
	Establish GUI				
	Session				
2	NOAM VIP: Insert	Execute steps listed in Appendix B: Configure New IPv6 Network Routes to add an IPv6			
	an IPv6 Route	route, if needed.			

Procedure 27: Add the New IPv6 NTP Servers: MP/DP Servers

_					
S T	S This procedure will provide the instructions how to add the new IPv6 NTP servers to the MP/DP servers				
E P #	Note: Not all installations will require new NTP servers to be added to each Server. Execute this procedure if data gathered in Procedure 1 indicates that IPv6-addressed NTP servers are needed.				
"	WARNING: Do <i>NOT</i> execute a " <i>NTP Sync</i> " from the Main Menu \rightarrow Status&Manage \rightarrow Server at this time. The NTP Sync action is service-effecting - doing so will temporarily stop DSR processes, as well as restart the NTP daemon. NTP changes will take place in Procedure 29.				
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.			
_	Establish GUI				
	Session				
2	NOAM VIP: Insert	Execute the steps in Appendix C : Add the New IPv6 NTP Servers to add NTP server(s)			
	the IPv6 NTP	with IPv6 address, if needed.			
	Servers				

S T P #	This procedure will pro an NTP Sync the SOA WARNING: In order affecting action and sh Note: Do not execute to configured, and, if need have been added. Check off $()$ each step as it IF THIS PROCEDURE FAILS	by b
1	SOAM VIP:	Establish an SSH session on the SOAM server VIP, login as <i>admusr</i> user.
	Establish SSH	
	Session	

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the SOAM servers.					
E P #	WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.					
	Note: Do not execute the procedure in this section until all site specific SOAM IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.					
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAIL	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
2	SOAM VIP: Verify	Verify services are currently using IPv4:				
	IPv4 usage	\$ sudo proctcpstat				
		Example output (Output shortened for display purposes):				
		cmha				
		::ffff:169.254.2.7:17401 ==> ::ffff:169.254.2.8:50084				
		::1:17402 ==> ::1:51728				
		::ffff: <mark>10.240.108.7</mark> :17401 ==> ::ffff: <mark>10.240.108.8</mark> :41491				
		10.240.108.7:36813 ==> 10.240.108.8:17401				
		169.254.2.7:40310 = => 169.254.2.8:17401				
		cmsoapa				
		::1:56543 ==> ::1:17402				
		inetmerge				
		$::ffff: \frac{169.254.2.7}{16878} = ::ffff: \frac{169.254.2.5}{55785}$				
		::1:56551 ==> ::1:17402				
		$\frac{169.254.2.7}{1000} = \frac{169.254.2.10}{1000} = 169$				
		::fff:169.254.2.7:16878 ==> ::fff:169.254.2.4:51314				
		$\frac{169.254.2.7}{36316} = \frac{169.254.2.13}{16878} = \frac{169.254}{16878} = $				
		::::::::::::::::::::::::::::::::::::				
		$\frac{169}{169} 254.2.7 \cdot 50929 ==> 169.254.2.10 \cdot 17402$				
		::1:56542 ==> ::1:17402				
		169.254.2.7:45942 ==> 169.254.2.15:17402				
		::ffff: <mark>169.254.2.7</mark> :17400 ==> ::ffff: <mark>169.254.2.8</mark> :3394				
		169.254.2.7:44988 = => 169.254.2.12:17402				
		vipmgr				
		::1:56541 ==> ::1:17402				
		::1:56540 ==> ::1:17402 ::1:45460 ==> ::1:17402				

S T	This procedure will pro an NTP Sync the SOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M servers.					
E P #	 WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a see affecting action and should be performed in a maintenance window. 						
	Note: Do not execute the procedure in this section until all site specific SOAM IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.						
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.					
3	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.					
4	NOAM VIP: Lock	After adding networks in, lock all networks now that all IPv6 interfaces have been added.					
	Networks	Navigate to the Main Menu → Configuration → Network					
		Select the network or networks to lock.					
		Select the Lock button at the bottom of the page.					
		Insert Edit Lock Delete Report					
		A " <i>Confirm</i> " dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.					
		Your browser session will be taken back to the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the network(s) maked as " <i>Locked=Yes</i> ".					
5	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA					
	role to Forced	Click Edit					
	Standby						
		Edit					
		Set the "Max Allowed HA Role" of the Active SOAM to Standby					
		Max Allowed HA Role					
		Standby -					

S T	This procedure will pro an NTP Sync the SOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M servers.	
E P #	WARNING: In order affecting action and sh	for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service- ould be performed in a maintenance window.	
	Note: Do not execute the procedure in this section until all site specific SOAM IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
6	NOAM VIP:	Navigate to the Main Menu → Status&Manage → Server	
	Perform "NTP Sync" on the	Select the standby SOAM server.	
	Standby SOAM	Select the NTP Sync button at the bottom of the page.	
		Stop Restart Reboot NTP Sync Report	
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.	
7	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA	
	Active SOAM HA		
	role to Active	Chek Edit	
		Edit	
		Set the "Max Allowed HA Role" of the Active SOAM to Active	
		Active -	
		Wait for Merging and replication related alarms to clear before proceeding.	
8	NOAM VIP: Set the	Navigate to the Main Menu → Status&Manage → HA	
	now Active SOAM HA role to Forced	Click Edit	
	Standby		
		Edit	
		Set the "Max Allowed HA Role" of the now Active (Formerly-Inactive) SOAM to Standby	
		Max Allowed HA Role	
		Standby -	

S T	This procedure will pro an NTP Sync the SOA	ovide the instructions how to switch all configured services to IPv6 networks by performing M servers.		
 WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a saffecting action and should be performed in a maintenance window. 				
	Note: Do not execute the procedure in this section until all site specific SOAM IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
9	NOAM VIP:	For the now active (formerly in-active) SOAM server		
	Perform an "NTP Sync" on the now	Navigate to the Main Menu → Status&Manage → Server		
	Active SOAM	Select the active SOAM server.		
	Server	Select the NTP Sync button at the bottom of the page.		
		Stop Restart Reboot NTP Sync Report		
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.		
10	NOAM VIP: Set the	Navigate to the Main Menu → Status&Manage → HA		
	now Active SOAM HA role to Active	Click Edit		
		Edit		
		Set the "Max Allowed HA Role" of the now Active (Formerly-Inactive) SOAM to Active		
		Active -		
		Wait for Merging and replication related alarms to clear before proceeding.		

 S This procedure will provide the instructions how to switch all configured services to IPv6 networks by an NTP Sync the SOAM servers. 				
E P #	WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.			
	Note: Do not execute the procedure in this section until all site specific SOAM IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
11	SOAM VIP: Verify			
	IPv6 usage	Verify services are now using IPv6:		
		\$ sudo proctopstat		
		Example output (Output shortened for display purposes):		
		cmha		
		::1:17402 ==> ::1:53696		
		fd02::73:17401 ==> fd02::74:50328		
		$2001:4888:0:903::73:17401 \Longrightarrow 2001:4888:0:903::74:62216$		
		fd02::73:62648 ==> fd02::74:17401		
		cmsoapa		
		::1:53689 ==> ::1:17402		
		inetmerge		
		fd02::73:16878 ==> fd02::74:52576		
		$\frac{2001:4888:0:903::73}{:16878} \Longrightarrow \frac{2001:4888:0:248::16}{:62485}$		
		fd02::73:55449 ==> fd02::77:16878		
		::1:53694 ==> ::1:17402		
		$\frac{2001:4888:0:903::73}{:16878} = \frac{2001:4888:0:248::17}{:64949}$		
		$\frac{2001:4888:0:903::73}{:16878} = \frac{2001:4888:0:903::69}{:61609}$		
		fd02::73:50635 ==> fd02::75:16878		
		inetrep		
		fd02::73:52475 ==> fd02::78:17400		
		::1:53680 ==> ::1:17402		
		2001:4888:0:903::73:17400 ==> 2001:4888:0:903::70:53834		
		fd02::73:56124 ==> fd02::90:17402		
		vipmgr		
		::1:57026 ==> ::1:17402		
		::1:53696 ==> ::1:17402		

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the MP/DP servers.WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.			
E P #				
	Note: Do not execute the procedure in this section until all site specific MP/DP IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.			
	Check off ($$) each step as i	t is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
1	SOAM VIP: Establish SSH Session	Establish an SSH session on the MP/DP server, login as <i>admusr</i> user.		
2	MP/DP Server: Verify IPv4 usage	Verify services are currently using IPv4:		
		\$ sudo proctcpstat		
		Example output (Output shortened for display purposes):		
		cmba		
		::ffff: 169.254.2.10: 17402 ==> ::ffff: 169.254.2.8: 55492		
		::1:17402 ==> ::1:55998		
		$\frac{169.254.2.10}{50169} = \frac{169.254.2.11}{17401}$		
		::1:17402 ==> ::1:55991		
		::1:17402 ==> ::1:60987		
		cmsoapa		
		::1:55998 ==> ::1:17402		
		dsr		
		$\frac{169.254.2.10}{16529} \Longrightarrow \frac{169.254.2.13}{165228}$		
		::1:60988 ==> ::1:17402		
		:::fiff: 169.254.2.10::168/8 ==> :::fiff: 169.254.2.7:49941 $::1::55001 ==> ::1:17402$		
		$\frac{1.1.53771}{1.69254210} = 2.117402$		
		interep		
		169.254.2.10; 63069 ==> 169.254.2.10; 17402		
		::1:55992 ==> ::1:17402		
		$::ffff: \frac{169.254.2.10}{:}:17400 ==> ::ffff: \frac{169.254.2.8}{:}:63096$		
		vipmgr		
		::1:55997 ==> ::1:17402		
		::1:55996 ==> ::1:17402		

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the MP/DP servers.				
E P #	WARNING: In order affecting action and sh	WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.			
	Note: Do not execute a configured, and, if nee have been added.	e: Do not execute the procedure in this section until all site specific MP/DP IPv6 interfaces have been figured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs e been added.			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
3	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA			
	MP/DP Servers HA	Click Edit			
	Standby				
		Edit			
	Set the "Max Allowed HA Role" of the MP/DP Servers to Standby				
		Warning: Do not select more than 50% of MP/DP servers in a particular server group.			
		Max Allowed HA Role			
		Standby -			
		Make note of the MP/DP servers that were set to standby here.			
4	NOAM VIP:	Navigate to the Main Menu → Status&Manage → Server			
	Perform NTP Sync on the MP/DP	Select the MP/DP servers that were set to standby from step 2.			
	Servers	Note: Hold Ctrl to select more than one server at a time.			
		Select the NTP Sync button at the bottom of the page.			
		Stop Restart Reboot NTP Sync Report			
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.			

S T	by b		
E P #	WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.		
	Note: Do not execute the procedure in this section until all site specific MP/DP IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
5	NOAM VIP: Set the	Navigate to the Main Menu → Status&Manage → HA	
5	NOAM VIP: Set the MP/DP Server HA role to Active	Navigate to the Main Menu → Status&Manage → HA Click Edit	
5	NOAM VIP: Set the MP/DP Server HA role to Active	Navigate to the Main Menu → Status&Manage → HA Click Edit Edit	
5	NOAM VIP: Set the MP/DP Server HA role to Active	Navigate to the Main Menu → Status&Manage → HA Click Edit Edit Set the "Max Allowed HA Role" of the MP/DP server to Active	
5	NOAM VIP: Set the MP/DP Server HA role to Active	Navigate to the Main Menu → Status&Manage → HA Click Edit Edit Set the "Max Allowed HA Role" of the MP/DP server to Active Active	

S T	This procedure will provide the instructions how to switch all configured services to IPv6 networks by performing an NTP Sync the MP/DP servers.		
E P #	WARNING: In order for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service-affecting action and should be performed in a maintenance window.		
	Note: Do not execute the procedure in this section until all site specific MP/DP IPv6 interfaces have been configured, and, if needed, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs have been added.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.		
6	MP/DP Server:	Verify services are now using IPv6:	
	Verify IPv6 usage	<pre>\$ sudo proctcpstat</pre>	
		Example output (Output shortened for display purposes):	
		cmha	
		2001:4888:0:903::75:17401 ==> 2001:4888:0:903::90:64638	
		::1:17402 ==> ::1:55844	
		fd02::75:17401 ==> fd02::76:61409	
		$2001:4888:0:903::75:41728 \Longrightarrow 2001:4888:0:903::90:17401$	
		fd02::75:41299 ==> fd02::76:17401	
		::1:17402 ==> ::1:5583	
		cmsoapa	
		::1:55844 ==> ::1:17402	
		dsr	
		::1:55489 ==> ::1:17402	
		fd02::75:64141 ==> fd02::84:16529	
		$10.240.246.132:9675 \Longrightarrow 10.240.246.139:62855$	
		fd02::75:60417 ==> fd02::76:16529	
		::1:55487 ==> ::1:17402	
		$\frac{1}{102:::/5}:168/8 => \frac{1}{102:::/4}:59227$	
		$\frac{11253839}{112} = 2 \cdot 1121/402$	
		100275.10070 = -> 100275.50055	
		fd0275.17400 ==> fd0290.51778	
		::1:55841 ==> ::1:17402	
		vipmgr	
		::1:55838 ==> ::1:17402	
		1.55141 ==>1.17402	

S T P #	This procedure will pro an NTP Sync the MP/I WARNING: In order affecting action and sh Note: Do not execute to configured, and, if nee have been added. Check off (√) each step as it IF THIS PROCEDURE FAILS	Devide the instructions how to switch all configured services to IPv6 networks by performing DP servers. for the new IPv6 network changes to take effect, a NTP Sync is required. This is a service- ould be performed in a maintenance window. the procedure in this section until all site specific MP/DP IPv6 interfaces have been ded, all IPv6 routes have been configured and all new NTP servers and Server Group VIPs is completed. Boxes have been provided for this purpose under each step number. s, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
7	NOAM VIP: Perform NTP Sync on Remaining MP/DP Servers	Repeat step 2 on any remaining MP/DP servers.

S T P #	This procedure details the steps to configure IPv6 for Inter-IPFE synchronization. Note: Only Execute this step if MP IMI was migrated to IPv6, otherwise skip this step Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
1	SOAM VIP:	Establish an SSH session on the IPFE server, login as <i>admusr</i> user.
	Establish SSH Session	

_					
S T	This procedure details the steps to configure IPv6 for Inter-IPFE synchronization.				
E P	Note: Only Execute this step if MP IMI was migrated to IPv6, otherwise skip this step				
#	# Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
2	IPFE Server:	Verify services are currently using IPv4:			
	Verify IPv4 usage	<pre>\$ sudo proctcpstat</pre>			
		Example output (Output shortened for display purposes):			
		cmha			
		::1:17402 ==> ::1:35910			
		$::ffff: \frac{169.254.2.15}{:}:17402 ==> ::ffff: \frac{169.254.2.8}{:}:37566$			
		::1:17402 ==> ::1:35907			
		$::ffff: \frac{169.254.2.15}{:}:17402 ==> ::ffff: \frac{169.254.2.7}{:}:45942$			
		cmsoapa			
		::1:35909 ==> ::1:17402			
		inetmerge			
		::ffff: <mark>169.254.2.15</mark> :16878 ==> ::ffff: <mark>169.254.2.8</mark> :36396			
		::1:35913 ==> ::1:17402			
		::ffff: <mark>169.254.2.15:</mark> 16878 ==> ::ffff: <mark>169.254.2.7</mark> :48178			
		inetrep			
		$::ffff: \frac{169.254.2.15}{:}:17400 ==> ::ffff: \frac{169.254.2.8}{:}:48775$			
		::1:35904 ==> ::1:17402			
		$\frac{169.254.2.15}{169.254.2.15}:49537 = > \frac{169.254.2.10}{169.254.2.10}:17402$			
		ipfe			
		$\frac{169.254.2.15}{19041} = \frac{169.254.2.14}{155598}$			
		vipmgr			
		::1:35910 ==> ::1:17402			
		::1:35911 ==> ::1:17402			
	1	1			

S T	This procedure details	s the steps to configure IPv6 for Inter-IPFE synchronization.	
E P	Note: Only Execute this step if MP IMI was migrated to IPv6, otherwise skip this step		
#	Check off (\mathbf{v}) each step as	it is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
3	SOAM VIP:	Navigate to IPFE -> Configuration -> Target Sets	
	Record existing target set	Select each target set and select the Edit button.	
	configurations.	Record the active IPFE radio button settings for each Target Set in the following table:	
		TS Number	
		Active IPFE for Primary Address	
		Active IPFE for Secondary Address	
		Select Cancel to back out from the edit menu.	
4	SOAM VIP: Establish GUI Session	Establish a GUI session on the SOAM server, login as <i>guiadmin</i> user.	
5	SOAM VIP:	Navigate to IPFE -> Configuration -> Target Sets	
	IPFE on each	Select the first target set and select the Edit button.	
	Target Set	Change the Active IPFE on both the Primary and Secondary public IP addresses to the cooresponding right-hand radio button:	
		Primary Public IP Address	
		Address 3.0.0.250	
		Active IPFE A1	
		CIPFE B1IPFE B2C	
		Secondary Public IP Address [†]	
		Secondary Address 3.1.0.250	
		Active IPFE for secondary address	
		Example: If you currently have IPFE-A1 selected as the active IPFE, select IPFE-A2.	
		Repeat for additional Target Sets.	

S T	This procedure detail	s the steps to configure IPv6 for	Inter-IPFE synchronization.		
E P #	Note: Only Execute t	his step if MP IMI was migrated	to IPv6, otherwise skip this step		
	Check off ($$) each step as	it is completed. Boxes have been provide	d for this purpose under each step number.		
	IF THIS PROCEDURE FAIL	s, CONTACT Appendix H: My oracl	e support (MOS) and ask for assistance.		
6	SOAM VIP:	Navigate to IPFE -> Configur	ation -> Options		
	Change the previously Active	Note: IPFE-A1 Address and IP	FE-B1 address will now be editable.		
	IPFEs to IPv6 Select the IPv6 interface for each IPFE that cooresponds with the existing IPv4				
	addresses.	interface:	-		
		Variable	Value		
		Inter-IPFE Synchronization			
		IPFE-A1 IP Address	10.240.89.48 - Javelin-IPFE-1 🔹		
		IPFE-A2 IP Address	10.240.89.49 - Javelin-IPFE-2 -		
		IPFE-B1 IP Address	10.240.89.50-Javelin-IPFE-3 *		
		IPFE-B2 IP Address	10.240.89.51-Javelin-IPFE-4 -		
		State Sync TCP Port	19041 *		
		State Sync Reconnect Interval	1 *		
		Gratuitous ARP Type	ARP Request 🔹		
		Example: Following Step 3 ex the IPv6 address that corresponserver.	ample, you will now change IPFE-A1 and IPFE-B1 to ds with the existing IPv4 address interface for that		

Procedure 30: Inter-IPFE Synchronization Configuration for IPv6 (If equiped)

S T	This procedure detai	ls the steps to configure IPv6 for Inter-IPFE synchronization.
E P	Note: Only Execute	this step if MP IMI was migrated to IPv6, otherwise skip this step
#	Check off (1) each step as	it is completed. Boxes have been provided for this purpose under each step number.
	IF THIS PROCEDURE FAII	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
7	SOAM VIP:	Navigate to IPFE -> Configuration -> Target Sets
	IPFE on each	Select the first target set and select the Edit button.
	Target Set	Change the Active IPFE on both the Primary and Secondary public IP addresses to the corresponding left-hand radio button:
		Primary Public IP Address
		Address 3.0.0.250 *
		Active IPFE
		IPFE B1
		Secondary Public IP Address [†]
		Secondary Address 3.1.0.250
		Active IPFE for secondary address
		Example: IPFE-A2 should be changed to IPFE-A1
		Repeat for additional Target Sets.
8	SOAM VIP:	Navigate to IPFE -> Configuration -> Options
	Change the previously Active IPFEs to IPv6	IPFE-A2 IP address and IPFE-B2 IP address will now be editable. Select the IPv6 interface for each IPFE that cooresponds with the existing IPv4 interface:
	addresses.	Variable Value
		Inter-IPFE Synchronization
		IPFE-A1 IP Address 10.240.89.48 - Javelin-IPFE-1 👻
		IPFE-A2 IP Address 10.240.89.49 - Javelin-IPFE-2 🔹
		IPFE-B1 IP Address 10.240.89.50-Javelin-IPFE-3 -
		IPFE-B2 IP Address 10.240.89.51-Javelin-IPFE-4 -
		State Sync TCP Port 19041 *
		State Sync Reconnect Interval 1 *
		Gratuitous ARP Type ARP Request 🔹
		Example: Following Step 5 example, you will now change IPFE-A2 and IPFE-B2 to the IPv6 address that corresponds with the existing IPv4 address interface for that server.

S T P #	 S T P P # This procedure details the steps to configure IPv6 for Inter-IPFE synchronization. Note: Only Execute this step if MP IMI was migrated to IPv6, otherwise skip this step Check off (1) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. 	
9	SOAM VIP: Restore original Active IPFE configuration	Navigate to IPFE -> Configuration -> Target Sets Select each target set and select the Edit button. From the table of Step 2 , return each target set to its original radio button settings for Active IPFE for primary and secondary address.

S T	This procedure details the steps to configure IPv6 for Inter-IPFE synchronization.					
Ē	E Note: Only Execute this step if MP IMI was migrated to IPv6 otherwise skip this step					
P	Check off $(\sqrt{)}$ each step as it is completed. Boxes have been provided for this purpose under each step number.					
#						
	IE THIS DROCEDURE FAIL	S CONTACT Appendix H: My oracle support (MOS) and ask for assistance				
	IF THIS PROCEDURE FAIL	s, contact Appendix 11. wy ofacte support (wos) and ask for assistance.				
10	IPFE Server:					
	Verify IPv6 usage	Verify services are now using IPv6:				
		<pre>\$ sudo proctcpstat</pre>				
		Example output (Output shortened for display purposes):				
		cmha				
		::1:17402 ==> ::1:58764				
		fdbd:aaec:587c:6efb:910:10:2:11:17402 ==> fdbd:aaec:587c:6efb:910:10:2:3:49880				
		::1:17402 ==> ::1:58760				
		fdbd:aaec:587c:6efb:910:10:2:11:17402 ==> fdbd:aaec:587c:6efb:910:10:2:7				
		::1:17402 ==> ::1:58759				
		cmsoapa				
		::1:58764 ==> ::1:17402				
		inetmerge				
		fdbd:aaec:587c:6efb:910:10:2:11:16878 ==> fdbd:aaec:587c:6efb:910:10:2:3:55238				
		::1:58761 ==> ::1:17402				
		inetrep				
		::1:58760 ==> ::1:17402				
		fdbd:aaec:587c:6efb:910:10:2:11:17400 ==> fdbd:aaec:587c:6efb:910:10:2:3:64808				
		::1:58757 ==> ::1:17402				
		ipfe				
		$10.240.76.200:61241 \Longrightarrow 10.240.76.201:19041$				
		fd0d:deba:d97c:f19::4:49365 ==> fd0d:deba:d97c:f19::2:9675				
		$10.240.63.69:63833 \Longrightarrow 10.240.63.66:9675$				
		fd0d:deba:d97c:f18::4:57395 ==> fd0d:deba:d97c:f18::1:9675				
		$10.240.63.69:58418 \Longrightarrow 10.240.63.67:9675$				
		fd0d:deba:d97c:f27::4:52744 ==> fd0d:deba:d97c:f27::2:9675				
		$\frac{fd0d:deba:d97c:f26::4}{fd0d:deba:d97c:f26::2}:9675$				
		vipmgr				
		::1:58762 ==> ::1:17402				
		::1:58763 ==> ::1:17402				

Procedure 31: Modify Export Server IP Addresses: SOAM

S T P #	This procedure details the steps to modify the export server IP addresses. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.					
	SOAM VIP:Establish a GUI session on the SOAM server, login as guiadmin user.Establish GUISession					
2	SOAM VIP: Modify the Export Modify the Export Server addresses by executing the steps in Appendix E:					

S T	This procedure details	rocedure details the steps to add IPv6 addresses to the ComAgent remote server GUI screen.				
E P #	Note: This step require DSR and SDS.	res the DSR and SDS to be fully migrated to IPv6 by following the previous steps for BOTH				
π	Check off (\mathbf{v}) each step as it	ff ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS,	IS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	DSR/SDS NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.				
2	Session DSR/SDS NOAM VIP: Configure IPv6 Remote Server IP Address	Navigate to Main Menu -> Communication Agent -> Configuration -> Remote Servers Configuration Remote Servers Connection Groups Routed Services Select the remote server Click Edit Enter Remote Server IPv6 Address Set the desired IP address preference to IPv6 Remote Server IPv6 IP Address The Remote Server IPv6 IP Address The Remote Server IPv6 IP Address ComAgent Network Preference IPv4 Preference				
3	DSR/SDS NOAM VIP: Repeat for Remote/Server end of the ComAgent Connection	Repet step 3 to configure the other end of the ComAgent connection (Server or Client).				

Procedure 32: Configure IPv6 ComAgent Remote Server Connections (DSR + SDS)

S T	This procedure details	re details the steps to add IPv6 addresses to the ComAgent remote server GUI screen.				
E P #	Note: This step require DSR and SDS.	uires the DSR and SDS to be fully migrated to IPv6 by following the previous steps for BOTH				
"	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.					
4	Current implementation of the IPv6 preferred setting may allow the ComAgent connection to revert to the IPv4 connection if the IPv6 connection is disrupted. The following command allows the setting of the retry count in the event the preferred connection is disrupted. This step is considered optional.					
	(Optional)	1) Establish an SSH session to the Active SDS NOAM, login as <i>admusr</i> .				
		<pre>\$ sudo iset -fvalue=720 ComAgtConfigParams where "name='Max Reconnection Retry Count To Same IP'"</pre>				
		Note: The above example shows a retry count of 12 minutes of the preferred IP network from step 3-4.				
		2) Establish an SSH session to the Active DSR NOAM, login as <i>admusr</i> .				
		<pre>\$ sudo iset -fvalue=720 ComAgtConfigParams where "name='Max Reconnection Retry Count To Same IP'"</pre>				
		Note: The above example shows a retry count of 12 minutes of the preferred IP network from step 3-4.				
5	DSR/SDS NOAM	Navigate to Main Menu -> Status Manage -> Server				
5	DSR/SDS NOAM VIP: Reboot Servers	Navigate to Main Menu -> Status Manage -> Server Status & Manage Network Elements Server HA Database KPIs Processes Refer to the list of servers from Step 3 Select the MP/DP servers. Note: Hold Ctrl to select more than one server at a time.				
5	DSR/SDS NOAM VIP: Reboot Servers	Navigate to Main Menu -> Status Manage -> Server Status & Manage Network Elements Server HA Database KPIS Processes Refer to the list of servers from Step 3 Select the MP/DP servers. Note: Hold Ctrl to select more than one server at a time. Warning: Do not select more than 50% of MP/DP servers in a particular server group.				
5	DSR/SDS NOAM VIP: Reboot Servers	Navigate to Main Menu -> Status Manage -> Server Status & Manage Network Elements Server HA Database KPIS Processes Refer to the list of servers from Step 3 Select the MP/DP servers. Note: Hold Ctrl to select more than one server at a time. Warning: Do not select more than 50% of MP/DP servers in a particular server group. Click Reboot				
5	DSR/SDS NOAM VIP: Reboot Servers	Navigate to Main Menu -> Status Manage -> Server Status & Manage Network Elements Server HA Database KPIs Processes Refer to the list of servers from Step 3 Select the MP/DP servers. Note: Hold Ctrl to select more than one server at a time. Warning: Do not select more than 50% of MP/DP servers in a particular server group. Click Reboot Stop Restart Reboot				

Procedure 32: Configure IPv6 ComAgent Remote Server Connections (DSR + SDS)

S T	This procedure details the steps to add IPv6 addresses to the ComAgent remote server GUI screen.						
E P #	Note: This step require DSR and SDS.	equires the DSR and SDS to be fully migrated to IPv6 by following the previous steps for BOTH					
"	Check off ($$) each step as it	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAILS,	F THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.					
6	DSR/SDS NOAM VIP: Verify/Set ComAgent Remote Server IPv6 connection	Navigate to Main Menu -> Communication Agent -> Maintenance -> Connection Status Communication Agent Graph Configuration Remote Servers					
		Connection Groups Connection Status Connection S					
		Under the 2nd Column, select the Peer Server Names that were previously configured in steps 2 and 3 . Verify if the Peer Server IP Address is that of the IPv6 Address configured in Steps 2 and 3 .					
		Peer Server Name	Peer Server IP-Address	Connection Status	Admin Connection State	Connection Type	
		Turks-DA-MP-02	fd02::76	InService	Enabled	Auto	
		Turks-DA-MP-03	fd02::90	InService	Enabled	Auto	
		Turks-DA-MP-04	fd02::91	InService	Enabled	Auto	
		Turks-SS7-MP-01	fd02::79	InService	Enabled	Auto	
		Turks-SS7-MP-02	fd02::80	InService	Enabled	Auto	
		Turks IDU I	6400-05	InService	Enabled	Configured	
		turks-DP-01	169.254.2.83	InService	Enabled	Configured	
		turks-DP-02	1002::84	InService	Enabled	Configured	
0	DSD/SDS NOAM	If the address is IPv4	, select Disable for a p port Enable or the above Peer Serv Server IP connection (peer server com Disable rer (one at a time)	nection.	rvar or Client)	
8 	VIP: Repeat for Remote/Server end of the ComAgent Connection	Repeat step 5 to confi	gure the other end of t	uie ComAgent (connection (Se	rver or Client).	

3.2.4 iDIH Migration

This section describes the procedures that must be executed on the iDIH to migrate the iDIH servers from IPv4 to IPv6 networks.

S T	This procedure will provide the instructions how to add the new IPv6 networks.				
E P #	Note: This step requires the DSR and TVOE to be fully migrated to IPv6 by following the previous steps for DSR and TVOE.				
	Check off (\mathbf{v}) each step as it is completed. Boxes have been provided for this purpose under each step number.				
1	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	IDIH TVOE ILO Establish a GUI session on the iDIH TVOE ILO, login as <i>admusr</i> user.				
	or Cloud GUI: Establish GUI Session Note: For Cloud deployments use the cloud vendors Management GUI				
2	IDIH TVOE ILO	Use the virsh command to obtain a console on the mediation guest login in as <i>admusr</i> user			
2	or Cloud console:	ese ne visi commune to obtain a console on the mediation guest, iogin in as autous aser.			
	Use the virsh	\$ sude wirsh console (modiation application or oragle)			
	console to connect to	sudo viisi console (mediación, applicación of oracles			
	the mediation guest. Connected to domain mediation Escape character is ^1				
	Or the cloud vendors				
	GUI console.	Rernel 2.6.32-504.16.2.el6prerel7.0.2.0.0_86.26.0.x86_64 on an x86_64			
	d-ray-med login: admusr				
		Password:			
3	iDIH Guest virsh Use the netAdm command to query the existing management or xmi interface configura				
	console or Cloud and the current default route.				
	netAdm command to				
	query the	<pre>\$ sudo netAdm querydevice=<management interface="" or="" xmi=""></management></pre>			
	query neProtocol: nonemanagement or xmiIP Address: 10.250.51.185interface.Netmask: 255.255.0				
		On Boot: yes Type: Ethernet			
		<pre>\$ sudo netAdm queryroute=defaultdevice=<management or="" pre="" xmi<=""></management></pre>			
		interface>			
		Routes for TABLE: main and DEVICE: management			
		* NETWORK: default GATEWAY: 10.250.51.1			

S T	This procedure will provide the instructions how to add the new IPv6 networks.				
E P #	Note: This step requires the DSR and TVOE to be fully migrated to IPv6 by following the previous steps for DSR and TVOE.				
	Check off $()$ each step as it	is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
4	iDIH Guest virsh console or Cloud console: Use the				
netAdm command to configure IPv6 address.\$ sudo netAdm setdevice= <management interface="" or="" xmi=""> address of the xmi or management interface netmask=<ipv6 netmask=""></ipv6></management>					
	Interface management updated				
	Note: The following command should only be run on the mediation guest, and only if y intend to update the medation imi interface with an IPv6 address.				
	<pre>\$ sudo netAdm setdevice=imiaddress=<ipv6 address="" imi="" interface="" of="" the="">netmask=<ipv6 netmask=""></ipv6></ipv6></pre>				
	Interface management updated				
5	iDIH Guest virsh console or Cloud console: Use the	On the mediation guest virsh console, Use the netAdm command to add the IPv6 default route.			
	netAdm to set the IPv6 default route.	<pre>\$ sudo netAdm addroute=defaultgateway=<ipv6 default="" route<br="">address>device=<management interface="" or="" xmi=""></management></ipv6></pre>			

a	This procedure will provide the instructions how to add the new IDv6 networks				
S T	I his procedure will provide the instructions now to add the new IPv6 networks.				
E P #	Note: This step requires the DSR and TVOE to be fully migrated to IPv6 by following the previous steps for DSR and TVOE.				
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
6	iDIH Guest virsh console or Cloud Console: Use theUse the netAdm command to query the updated management or xmi interface configure and the current default routes.				
	netAdm command to query the management or xmi interface and the default route.	<pre>\$ sudo netAdm querydevice=<management interface="" or="" xmi=""> Protocol: none IP Address: 10.250.51.185 Netmask: 255.255.255.0 IPv6 Address: 2606:b400:605:b80d:32:faff:fe15:3995/64 On Boot: yes Type: Ethernet</management></pre>			
		<pre>\$ sudo netAdm queryroute=defaultdevice=<management or="" pre="" xmi<=""></management></pre>			
	<pre>interface> Routes for TABLE: main and DEVICE: management * NETWORK: default GATEWAY: 10.250.51.1</pre>				
	* NETWORK: default GATEWAY: 2606:b400:605:b80d:226:98ff:fe1a:9ac1				
	Note: The following command should only be run on the mediation guest, and only if intend to update the medation imi interface with an IPv6 address.				
	<pre>\$ sudo netAdm querydevice imi Protocol: none IP Address: 192.168.32.11 Netmask: 255.255.254 IPv6 Address: fe80::62:f4ff:fee8:7b9/64 On Boot: yes Type: Ethernet</pre>				
7	iDIH Guest virsh Use the init command to shut down the Mediation guest.				
	console or Cloud Console: Shutdown the guest.	<pre>\$ sudo init 0</pre>			
8	Procedure Overview	dureRepeat Steps 2 through 7 for the following VMs. Be sure to perform the repeated steps in the order listed below, I.E. update the application guest then the oracle guest.			
		iDIH Application			
		iDIH Oracle			
9	PMAC GUI or	Use the PMAC GUI to start each guest. Start the guests in the following order mediation,			
	Cloud Management GUI: Use the	application then the oracle guests.			
	PMAC GUI or Cloud Management GUI to start the	VM Management -> guest -> Current Power State: -> On -> Change			
	iDIH guests Note: It will take approximately 10 minutes for all the guests to boot.				

S T	This procedure will provide the instructions how to add the new IPv6 networks.				
E P #	Note: This step requires the DSR and TVOE to be fully migrated to IPv6 by following the previous steps for DSR and TVOE.				
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS,	, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
10	iDIH Application console (optional): Use the application console to update the	Open a terminal window and log in as admusr on the iDIH Application server. Copy the files server.crt and server.key that are provided by the customer to /root. Enter the platcfg menu. As admusr, run:			
	SNMP server with	\$ sudo su - platofg			
	an IPvo address.	Select Application Server Configuration ➤ SNMP Agent Configuration.			
		A window appears which allows you to enter the IPv6 address of the SNMP management platform and version of SNMP agent and traps.			
		Select Edit.			
		Type the appropriate values and click OK.			
	The SNMP agent configuration is updated and the SNMP Management server is automatically restarted.				
	Exit the platcfg menu.				
11	Configure DSR Reference Data Synchronization for IDIH (DSR 7.1-	Open a terminal window and log in as admusr on the iDIH Application server. Issue the following commands to login as <i>tekelec</i> user. \$ sudo su - tekelec Execute the following script:			
	Optional):	<pre><hostname>:/usr/TKLC/xIH_apps/trda-config.sh</hostname></pre>			
	Use the script to update the SOAM server with an IPv6	NOTE: While prompted "Please enter DSR SOAM server IP address", enter the VIP of the DSR SOAM and press Enter.			
	address.				
12	NOAM GUI: Configure the iDIH comAgent	Connect to the NOAM GUI navigate to the communication menu and update the IPv6 imi address of the iDIH mediation guest.			
	connection on the NOAM.	Communication Agent -> Configuration -> Remote Servers			
		Add the "imi iDIH mediation IPv6 guest address", select "Server" and "MPGroup".			
13	SOAM GUI:	Add the "imi iDIH mediation IPv6 guest address", select "Server" and "MPGroup". Connect the SOAM GUI navigate to the Diameter menu and update the IPv6			
13	SOAM GUI: Configure the "Troublesbesting	Add the "imi iDIH mediation IPv6 guest address", select "Server" and "MPGroup". Connect the SOAM GUI navigate to the Diameter menu and update the IPv6 xmi/management address of the iDIH Application guest.			
13	SOAM GUI: Configure the "Troubleshooting with IDIH" option on the SOAM.	Add the "imi iDIH mediation IPv6 guest address", select "Server" and "MPGroup". Connect the SOAM GUI navigate to the Diameter menu and update the IPv6 xmi/management address of the iDIH Application guest. Diameter -> Troubleshooting with IDIH -> Configuration -> Options			

3.3 MIGRATION BACKOUT PROCEDURES

If, after migrating some or all servers in the DSR topology to use IPv6 networks and addresses and for some reason a back out is indicated, execute the following procedures.

Note: Since this document does not have procedures to remove old, now unused IPv4 networks and addresses during migration to IPv6, the IPv4 networks and addresses should still be in-place for the back out procedure. If this is not the case, then do not use this procedure.

Note: For IPv6 backout on Cloud Deployments do not perform backout procedures 42, 50, 51 and 52.

3.3.1 SOAM Site NE Backout

This section describes the procedures that must be executed on the NOAM to back out the SOAM, MP, and DP, servers from IPv6 to IPv4 networks.

Procedure 34: Delete the New IPv6 SOAM Server Group VIP

S T	This procedure will provide the instructions how to delete the new SOAM IPv6 VIPs.						
E P	Check off ($\sqrt{2}$) each step as it is completed. Boxes have been provided for this purpose under each step number.						
#	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.						
1	NOAM VIP:	VIP: Establish a GUI session on the NOAM server, login as guiadmin user.					
	Session						
2	NOAM VIP:	Execute this step to remove an IP	v6 VIP, if needed:				
	Remove any IPv6 VIPs from SOAM	Navigate to the Main Menu → Configuration → Server Groups					
	Server Group	Select the SOAM server group that needs an IPv6 VIP removed.					
		Select the Edit button at the bottom of the page. The GUI will show the Server Groups Edit form.					
		VIP Assignment					
		VIP Address [Add]					
		2001:0db8:0000:0000:ff00:0042:8329					
		10.240.47.68 Remove					
		Ok Apply Cancel					
	Select the Remove button to remove any IPv6 VIP Address text box.						
	Select Ok button to commit the form.						

Procedure 35: Delete	e IPv6 ComAgent	Remote Server	Configuration	(DSR + SDS)
		Itemore berrer	conjiguranon	

			/ · · · · · · · · · · · · · · · · · · ·	~= ~)		
S T	This procedure details the steps to delete IPv6 ComAgent remote server configuration.					
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
P #	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.					
1	DSR/SDS NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user. Note: You will complete this procedure for both sides of the ComAgent connection, login to				
		the DSK OI SDS				
2	DSR/SDS NOAM VIP: Set IP Address Preference	Navigate to Main Me	Production Agent cation Agent uration note Servers nection Groups ited Services ver IPv6 address. reference as ComAgent Ne 10240.76.204 fdbd:aaec:587c:6efb:910:10:2:15 Server ComAgent Network Preference IPv4 Preferred IPv4 Preferred IPv4 Preferred Pv6 Preferred Pv6 Preferred Pv6 Preferred Pv6 Preferred	gent -> Configuration etwork Preference.		
		precedence configura	ation			

S	This procedure details the steps to delete IPv6 ComAgent remote server configuration.			
T E	Check of (\mathbf{v}) each step as it is completed. Boxes have been provided for this purpose under each step number			
P				
#	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.			
3	DSR/SDS NOAM	Navigate to Main Menu -> Status Manage -> Server		
	VIP: Reboot Servers	🚊 🚔 Status & Manage		
		Network Flements		
		Server		
		HA HA		
	💽 Database			
	📷 KPIs			
	Refer to the list of servers from Step 2			
	Select the MP/DP servers.			
	Note: Hold Ctrl to select more than one server at a time.			
	Warning: Do not select more than 50% of MP/DP servers in a particular server group.			
		Click Reboot		
		Stop Restart Reboot NTP Sync Report		
4	DSR/SDS NOAM	Repeat this procedure for the remaining MP/DP servers.		
	VIP: Repeat			
5	SDS/DSR: Repeat	Upon completion of Step 4 , one side of the ComAgent connection should be backed out to		
		Ipv4.		
		Repeat this procedure for the other side of the ComAgent connection.		

Procedure 35: Delete IPv6 ComAgent Remote Server Configuration (DSR + SDS)

Procedure 36: Delete IPv6 Inter-IPFE Synchronization configuration (DSR Only)

S T	This procedure details the steps to delete the IPv6 inter-IPFE synchronization configuration.						
Ē	Check off ($\sqrt{2}$) each step as it is completed. Boxes have been provided for this purpose under each step number.						
Р #	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.						
1	SOAM VIP: Establish GUI Session	Establish a GUI session on the SOAM server, login as <i>guiadmin</i> user.					
2	SOAM VIP: Delete IPv6 Configuration of Inter-IPFE Synchronization	Follow the steps described in the IPv6 configuration inter-IPFE synchronization (Procedure 30), but replace with the original IPv4 addresses from the data gathered in Procedure 1					
S	This procedure will provide the instructions how to remove the new IPv6 NTP servers.						
--------	--	--	--	--	--	--	--
T F	T E Check off $(\sqrt{)}$ each step as it is completed. Boxes have been provided for this purpose under each step number.						
P	 P i if this procedure fails, contact oracle technical services and ask for assistance. 						
#							
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.					
	Session						
2	NOAM VIP:	Execute this step to remove NTP server(s) with IPv6 address, if needed.					
	NTP servers from	Navigate to the Main Menu \rightarrow Configuration \rightarrow Servers.					
	the MP/DP Server	Select the MP/DP server to remove an IPv6 addressed NTP server from.					
		Select the Edit button at the bottom of the page. The GUI will show the "Server Edit" form.					
		Note: Notice that only the NTP servers and the System ID are available for edit.					
		NTP Servers:					
		NTP Server IP Address Prefer					
		2001:0db8:0000:0000:ff00:0042:8329 Remove					
		10.240.47.106					
		Ok Apply Cancel					
		Select the Remove button to remove the IPv6 NTP Server text box.					
		Select the Add button to create the IPv4 NTP Server text box.					
		Enter the old IPv4 NTP server address into the text box.					
		Repeat the above steps if removing additional IPv6 addressed NTP Servers and replacing with old IPv4 addressed NTP Servers.					
		Once all IPv4 NTP Servers have been entered in the Server Edit form, select Ok button to commit the form.					
		Note: Do not execute any NTP Sync operation at this time.					
3	NOAM VIP: Remove IPv6 NTP	Repeat step 2 above to remove the new IPv6 NTP servers on remaining MP/DP servers.					
	servers for the remaining servers	Upon completion, you will have replaced IPv6 NTP servers with IPv4 NTP servers for each MP/DP server.					

Procedure 37: Delete the New IPv6 NTP Servers: MP/DP Servers

Procedure .	38: Delete	IPv6 Routes	and Interfaces:	MP/DP Servers
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S T	This procedure will provide the instructions how to delete the new IPv6 network routes.							
E P #	Note: Depending on n merging will stop duri will stop until replication status, the user may co	etwork configuration and how much of the topology has been migrated, OAM replication and ng this procedure. Updates to the Network Device and Network Route screens in the GUI ion and merging are restored. Although the screen will not display up-to-date configuration ontinue to modify devices and routes.						
	Note: The following procedure will first be executed on no more than 50% of the MP/DP servers, followed by th remaining MP/DP servers.							
	Note: It is recommended that the XMI IPv6 network be backed out prior to backing out the IMI IPv6 network(previously migrated).							
	Check off ($$) each step as it	t is completed. Boxes have been provided for this purpose under each step number.						
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.						
1	NOAM VIP: Establish GUI	Establish a GUI session on the NOAM server, login as guiadmin user.						
	Session							
2	NOAM VIP: Unlock Networks	If needed, unlock the IPv6 and matching IPv4 networks so that IPv6 interfaces can be deleted.						
		Navigate to the Main Menu \rightarrow Configuration \rightarrow Network						
		Select the one or more networks that have configured interfaces that need to be deleted.						
		Insert Edit Unlock Delete Report						
		Select the Unlock button at the bottom of the page.						
		A Confirmation dialog box will pop up. Select "check to confirm" and then select OK to continue.						
		Your browser session will remain on the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the networks are now unlocked.						
3	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA						
	HA role to Forced Standby	Click Edit						
		Edit						
		Set the "Max Allowed HA Role" of the MP/DP to Standby						
		Max Allowed HA Role						
		Standby -						
		Warning: Do not select more than 50% of MP/DP servers in a particular server group.						
		Login again to the NOAM VIP as <i>guiadmin</i> user.						
I								

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.				
E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.				
	Note: The following p remaining MP/DP serv	procedure will first be executed on no more than 50% of the MP/DP servers, followed by the vers.			
	Note: It is recommend previously migrated).	led that the XMI IPv6 network be backed out prior to backing out the IMI IPv6 network(If			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.			
4	Remove an IPv6Execute this step to remove an IPv6 route, if needed.				
	route	Navigate to the Main Menu → Configuration → Network → Routes			
		Select the server or server group to delete an IPv6 route from.			
		Insert Edit Delete Report Report All			
Select the Delete button at the bottom of the page.					
5	Remove remaining	Repeat step 4 above to remove the remaining IPv6 network routes added in procedure 27 .			
	IPv6 routes	Upon completion, you will have removed all IPv6 network routes for each application server.			

S	This procedure will provide the instructions how to delete the new IPv6 network routes.					
I E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.					
	Note: The following p remaining MP/DP serv	rocedure will vers.	first be execut	ted on no more that	n 50% of the MP/DP servers,	followed by the
	Note: It is recommend previously migrated).	led that the XM	MI IPv6 netwo	ork be backed out p	prior to backing out the IMI I	Pv6 network(If
	Check off ($$) each step as it	is completed. Bo	oxes have been pro	ovided for this purpose	under each step number.	
	IF THIS PROCEDURE FAILS,	CONTACT ORAC	LE TECHNICAL S	ERVICES AND ASK FO	R ASSISTANCE.	
6	NOAM VIP: Delete	Execute this	step to delete	a VLAN tagged II	Pv6 address to an existing dev	vice interface.
	IPv6 Interface	Navigate to	the Main Mei	nu → Configurati	on \rightarrow Network \rightarrow Devices.	
		Select the ta	b for the first l	MP server to have	IPv6 interfaces deleted.	
		Now select t deleting.	he Device Na	me that correspond	ls to the VLAN Id of the netw	vork you are
		Select the E	dit button at th	he bottom of the pa	ore. The GUI will show the "	Devices Edit"
		form.				
		General Options	MII Monitoring Option	ns ARP Monitoring Options	IP Interfaces	
		Field	Value		Description	<u>^</u>
		Device Type	 Ethernet Bonding Vlan Alias 	Select the device type. It cannot Range = Bonding, Vlan, Alias.]	be changed after device is created. [Default = N/A.	
		Device Monitoring	Monitoring Type 🔻	Choose a monitoring style to use devices. [Default = MII. Options =	with a bonding device. Disabled for non-bonding = MII, ARP.]	
		Start On Boot	Enable	Start the device, and also start or	n boot. [Default = enabled]	
		Boot Protocol	None 👻	Select the boot protocol. [Defaul	t = None, Range = None,DHCP]	=
		Base Device(s)	bond0 bond0.174 bond0.175 bond0.175 bond1 bond1.177 eth01 eth02 eth11 eth12 eth12 eth21 eth21 eth21 eth22	The base device(s) for Bonding, require 1 selection; Bonding dev device is created. [Default = N/A	Alias and Vlan device types. Alias and Vlan devices ices require 2 selections. It cannot be changed after Range = available base devices per device type.]	
		In the form,	select the IP I	nterfaces tab.		
		Select the R	emove button	to remove the new	PIPv6 address.	
		Select Ok b	utton to comm	it the form.		
7	NOAM VIP: Repeat for Additional MP/DP Servers	Repeat step	6 for addition	al MP/DP Servers.		

S T P #	 This procedure will provide the instructions how to delete the new IPv6 network routes. Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes. Note: The following procedure will first be executed on no more than 50% of the MP/DP servers, followed by the remaining MP/DP servers. Note: It is recommended that the XMI IPv6 network be backed out prior to backing out the IMI IPv6 network(If previously migrated). Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. 					
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.				
8	NOAM VIP: Lock Networks	Lock all networks now that all MP/DP IPv6 interfaces have been deleted. Navigate to the Main Menu → Configuration → Network Select the network or networks to lock. Select the Lock button at the bottom of the page. Insert Edit Lock Delete Report A "Confirm" dialog box will pop up. Select "check to confirm" and then select OK to continue. Your browser session will be taken back to the Main Menu → Configuration → Network page and in the grid you will see the network(s) maked as "Locked=Yes".				
9	Active SOAM : Login	Establish an SSH session on the active SOAM, login as <i>admusr</i> .				
10	Active SOAM : Restore OAM replication and Merging	Execute the following commands to restart ComCol and restore OAM replication and merging: \$ sudo rndc retransfer platform.cgbu.us.oracle.com \$ sudo nscd -i hosts				
	Standby SOAM: Repeat	Repeat Steps 9-10 on the standby SOAM				
12	MP/DP Servers : Restart ComCol and Restore OAM replication and Merging	Establish an SSH session to the MP/DP Server, login as <i>admusr</i> . Execute the following command to restart ComCol and restore OAM replication and merging: \$ sudo /usr/TKLC/appworks/bin/awntpcfg -synconly -force				

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.							
E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GU will stop until replication and merging are restored. Although the screen will not display up-to-date configurat status, the user may continue to modify devices and routes.							
	Note: The following procedure will first be executed on no more than 50% of the MP/DP servers, followe remaining MP/DP servers.							
	Note: It is recommended that the XMI IPv6 network be backed out prior to backing out the IMI IPv6 net previously migrated).							
	Check off (\mathbf{v}) each step as i	it is completed. Boxes have been provided for this purpose under each step number.						
	IF THIS PROCEDURE FAILS	, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.						
13	MP/DP Servers :	Perform the following command to verify ComCol IP connections are using IPv4:						
	Verify ComCol	<pre>\$ sudo proctcpstat</pre>						
	replication is using	Expected output:						
	IPv4							
		cmha $(1.17402 => (1.45460)$						
		$169.254.2.5:59861 \implies 169.254.2.4:17401$::1:17402 => ::1:45461						
		::1:17402 ==> ::1:57659 ::ffff:10.240.108.5:17401 ==> ::ffff:10.240.108.4:50368						
		::1:17402 =>> ::1:45471 ::1:17402 =>> ::1:45462						
		$10.240.108.5:56128 \Longrightarrow 10.240.108.4:17401$ $11.17402 \Longrightarrow 11.57658$						
	$\begin{array}{l} ::1:1/402 ==> ::1:5/050 \\ ::1:17402 ==> ::1:45459 \\ ::ffff:160 :>5:12 ::1:45459 \end{array}$							
		cmsoapa						
	::1:45462 ==> ::1:17402 inetmerge							
	169.254.2.5:49256 ==> 169.254.2.4:16878 ::ffff:169.254.2.5:16878 ==> :ffff:169.254.2.4:46701							
	$\begin{array}{rrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrrr$							
		inetrep						
	$169.254.2.5:62450 \implies 169.254.2.4:17400$							
		169.254.2.5:57584 ==> 169.254.2.11:17402 vipmgr						
		::1:45461 ==> ::1:17402						
		::1:45460 ==> ::1:17402						
		Perform the following command to verify ComCol merging link states:						
		<pre>\$ sudo inetmstat</pre>						
		[admusr@DAMP-1 ~]\$ sudo inetmstat						
		nodeld InetMerge State dir dSeq dTime updTime info SOAM-1 Standby To 0 0.00 10:06:54						
		Perform the following commands to verify ComCol replication link states:						
		<pre>\$ sudo irepstat</pre>						
		BC From SOAM-2 Active 0 0.50 $^{\circ}$ 0.11% cpu 33B/s A=me CC From DAM-2 Active 0 0.10 $^{\circ}$ 0.15 1.17% cpu 32B/s A=me						
		Policy 1001 DSR SLDB Policy []						
		0 CC To DAMP-2 Active 0 0.10 0.16%cpu 31B/s A=me 1 CC From DAMP-2 Active 0 0.10 ^0.11 1.10%cpu 52B/s A=me						

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.				
E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.				
	Note: The following p remaining MP/DP serv	procedure will first be executed on no more than 50% of the MP/DP servers, followed by the vers.			
	Note: It is recommend previously migrated).	led that the XMI IPv6 network be backed out prior to backing out the IMI IPv6 network(If			
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.			
14	NOAM VIP: Establish GUI Session	If not already done so, establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.			
15	NOAM VIP: Perform "NTP Sync"	Navigate to the Main Menu → Status&Manage → Server Select the MP/DP server. Select the NTP Sync button at the bottom of the page. Stop Restart Reboot NTP Sync Report A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync Select OK to continue			
	NOAM VIP: Set HA Role to Active	Navigate to the Main Menu → Status&Manage → HA Click Edit Edit Set the previously selected MP/DP servers (from step 3) "Max Allowed HA Role" to Active Active Wait for Merging and replication related alarms to clear before proceeding.			
17	Remaining MP/DP Servers: Repeat	Repeat ALL steps in this procedure on the remaining MP/DP Servers.			

Procedure	39.	Delete	the	New	IPv6	NTP	Servers:	SOAM	
I Toccuare	<i>J/</i> .	Dunn	inc	110 00	11 10		bervers.	JULIN	

S	This procedure will provide the instructions how to remove the new IPv6 NTP servers.						
T	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.						
P	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.						
#							
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.					
	Session						
2	NOAM VIP:	Execute this step to remove NTP server(s) with IPv6 address, if needed.					
	NTP servers from	Navigate to the Main Menu \rightarrow Configuration \rightarrow Servers.					
	Active SOAM	Select the Active NOAM server to remove an IPv6 addressed NTP server from.					
		Select the Edit button at the bottom of the page. The GUI will show the "Server Edit" form.					
		Note: Notice that only the NTP servers and the System ID are available for edit.					
		NTP Servers:					
		NTP Server IP Address Prefer					
		2001:0db8:0000:0000:ff00:0042:8329 Remove					
		10.240.47.106					
		Ok Apply Cancel					
		Select the Remove button to remove the IPv6 NTP Server text box.					
		Select the Add button to create the IPv4 NTP Server text box.					
		Enter the old IPv4 NTP server address into the text box.					
		Repeat the above steps if removing additional IPv6 addressed NTP Servers and replacing with old IPv4 addressed NTP Servers.					
		Once all IPv4 NTP Servers have been entered in the Server Edit form, select Ok button to commit the form.					
		Note: Do not execute any NTP Sync operation at this time.					
3	NOAM VIP:	Repeat step 2 above to remove the new IPv6 NTP servers on the standby SOAM server.					
	servers for the remaining servers	Upon completion, you will have replaced IPv6 NTP servers with IPv4 NTP servers for each SOAM server.					

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.						
E P	Note: Execute this procedure if IPv6 routes were added Note: Depending on network configuration and how much of the topology has been migrated, OAM replication ar merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.						
#							
	Note: The following procedure will first be executed on the Active SOAM, followed by the Standby SOAM.						
	Check off $()$ each step as it	t is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAILS,	, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.					
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.					
2	NOAM VIP: Unlock Networks	If needed, unlock the IPv6 and matching IPv4 networks so that IPv6 interfaces can be deleted.					
		Navigate to the Main Menu → Configuration → Network					
		Select the one or more networks that have configured interfaces that need to be deleted.					
		Insert Edit Unlock Delete Report					
		Select the Unlock button at the bottom of the page.					
		A Confirmation dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.					
		Your browser session will remain on the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the networks are now unlocked.					
3	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA					
	role to Forced	Click Edit					
	Standby	Edit					
		Set the "Max Allowed HA Role" of the Active SOAM to Standby					
		Standby -					
		Note: A switch-over will occur, where the formally standby SOAM server will become the active server.					

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.						
E P #	Note: Execute this procedure if IPv6 routes were added						
"	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.						
	Note: The following p	rocedure will first be executed on the Active SOAM, followed by the Standby SOAM.					
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.					
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.					
4	Remove an IPv6Execute this step to remove an IPv6 route, if needed.						
	route	Navigate to the Main Menu → Configuration → Network → Routes					
		Select the server or server group to delete an IPv6 route from.					
	Insert Edit Delete Report Report All						
	Select the Delete button at the bottom of the page.						
5	Remove remaining	Repeat step 4 above to remove the remaining IPv6 network routes added in procedure 23 .					
	Irvo routes	Upon completion, you will have removed all IPv6 network routes for each application server.					

_					
S T	This procedure will pr	will provide the instructions how to delete the new IPv6 network routes. his procedure if IPv6 routes were added			
E P #	Note: Execute this pro				
"	Note: Depending on n merging will stop duri will stop until replicati status, the user may co	network configuration and how much of the topology has been migrated, OAM replication and ing this procedure. Updates to the Network Device and Network Route screens in the GUI ion and merging are restored. Although the screen will not display up-to-date configuration ontinue to modify devices and routes.			
	Note: The following p	: The following procedure will first be executed on the Active SOAM, followed by the Standby SOAM.			
	Check off (\checkmark) each step as it	t is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS,	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.			
6	NOAM VIP: Delete	Execute this step to delete a VLAN tagged IPv6 address from an existing device interface.			
	the VLAN tagged IPv6 interfaces from	Navigate to the Main Menu → Configuration → Network → Devices			
	the SOAM servers	Select the tab for the standby SOAM server to have IPv6 interfaces deleted.			
		Now select the Device Name that corresponds to the VLAN Id of the network you are deleting.			
		Select the Edit button at the bottom of the page. The GUI will show the Devices Edit form.			
		General Options MII Monitoring Options ARP Monitoring Options IP Interfaces			
		IP Address List: Add Row			
		000:0000:ff00:0042:8329 Network Name ▼ Remove			
		10.240.50.66 XSi2 (10.240.50.64/26) ▼			
		Remove			
		In the form, select the IP Interfaces tab.			
		Select the Remove button to remove the new IPv6 address.			
		Select Ok button to commit the form.			
		Repeat this step for all IPv6 interfaces on the standby SOAM server			
		Repeat and step for an in vo interfaces on the standoy borrier server.			

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.		
E P #	Note: Execute this procedure if IPv6 routes were added		
	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.		
	Note: The following p	procedure will first be executed on the Active SOAM, followed by the Standby SOAM.	
	Check off ($$) each step as it	t is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
7	NOAM VIP: Lock	Lock all networks now that all standby SOAM IPv6 interfaces have been deleted.	
	Networks	Navigate to the Main Menu → Configuration → Network	
		Select the network or networks to lock.	
		Select the Lock button at the bottom of the page.	
		Insert Edit Lock Delete Report	
		A " <i>Confirm</i> " dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.	
		Your browser session will be taken back to the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the network(s) maked as " <i>Locked=Yes</i> ".	

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.			
E P	Note: Execute this procedure if IPv6 routes were added			
#	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.			
	Note: The following p	rocedure will first be executed on the Active SOAM, followed by the Standby SOAM.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
8	SOAM:	Establish an SSH session to the SOAM Server, login as <i>admusr</i> .		
	Verify/Modify the	Execute the following command to access/edit the named.conf file:		
	hamed.com me	<pre>\$ sudo vim /etc/named.conf</pre>		
		Under the 'zone' section, verify the 'masters' definitions include the IPv4 addresses of the parent NOAM/DR-NOAM Servers.		
		If the 'masters' definitions include IPv6 addresses, replace them with the corresponding IPv4 addresses of the NOAM/DR-NOAM gathered in Procedure 1 . <i>(Enter 'i' to edit the file)</i>		
		Example:		
		<pre>zone "ip6.arpa" { type slave; masters { 169.254.2.4; 169.254.2.5; }; file "rdb.platform.cgbu.us.oracle.com"; };</pre>		
zone "in-addr.arpa" {		zone "in-addr.arpa" {		
		type slave; masters { <mark>169.254.2.4; 169.254.2.5</mark> ; }; file "rdb.platform.cgbu.us.oracle.com";		
		<pre>zone "platform.cgbu.us.oracle.com" { type slave; masters { 169.254.2.4; 169.254.2.5; }; file "db.platform.cgbu.us.oracle.com"; };</pre>		
		If the IPv4 addresses are already present, enter ":q" to exit, if the file was edited, enter ":wq" to write and exit.		
9 □	SOAM : Restart ComCol and Restore OAM replication	Execute the following commands to restart ComCol and restore OAM replication and merging:		
		<pre>\$ sudo rndc retransfer platform.cgbu.us.oracle.com</pre>		
		<pre>\$ sudo /usr/TKLC/appworks/bin/awntpcfg -synconly -force</pre>		

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.			
E P	Note: Execute this procedure if IPv6 routes were added			
#	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.			
	Note: The following p	procedure will first be executed on the Active SOAM, followed by the Standby SOAM.		
	Check off ($$) each step as it	t is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
10	SOAM : Verify	Perform the following command to verify ComCol IP connections are using IPv4:		
	ComCol replication	<pre>\$ sudo proctcpstat</pre>		
	using IPv4	Expected output:		
		::1:17402 ==> ::1:45460		
		169.254.2.5:59861 ==> 169.254.2.4:17401 ::1:17402 ==> ::1:45461		
		::ffff:10.240.108.5:17401 ==> ::ffff:10.240.108.4:50368 ::1:17402 ==> ::1:45462 10.240.108.5:5128 ==> 10.240.108.4:17401		
		$10.240.100.5:50120 \implies 10.240.100.4:1/401$::1:17402 ==> ::1:57658 :.ffff:169 254 2 5:17401 ==> :.ffff:169 254 2 4:48811		
		cmsoapa		
		::1:45462 ==> ::1:17402		
		169.254.2.5:49256 ==> 169.254.2.4:16878		
		::ffff:169.254.2.5:16878 ==> ::ffff:169.254.2.4:46701 ::1:45471 ==> ::1:17402		
		169.254.2.5:55785 ==> 169.254.2.7:16878 169.254.2.5:36744 ==> 169.254.2.8:16878		
		160 254 2 5.62450> 160 254 2 4.17400		
		169.254.2.5:62450 ==> 169.254.2.4:17400 ::1:45459 ==> ::1:17402 169.254.2.5:44612 ==> 169.254.2.0:17402		
		$109.294.2.5:44013 \implies 109.254.2.8:17402$ $169.254.2.5:63825 \implies 169.254.2.8:17400$ $169.254.2.5:5784 \implies 169.254.2.11:17402$		
1		vipmgr		
		::1:45461 ==> ::1:17402 ::1:45460 ==> ::1:17402		
		Perform the following command to verify ComCol merging link states:		
		<pre>\$ sudo inetmstat</pre>		
		nodeId InetMerge State dir dSeq dTime updTime info NOAM-2 Standby To 0 0.00 11:00:46		
		NOAM-1 Standby To 0 0.00 11:00:46 IPFE-1 Standby From 0 0.00 11:00:46		
		SS7MP-2 Standby From 0 0.00 11:00:46 SS7MP-1 Standby From 0 0.00 11:00:46		
1		DAMP-2 Standby From 0 0.00 11:00:46		
		Perform the following commands to verify ComCol replication link states:		
		<pre>\$ sudo irepstat</pre>		

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.		
E P # Note: Execute this procedure if IPv6 routes were added			
"	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.		
	Note: The following p	rocedure will first be executed on the Active SOAM, followed by the Standby SOAM.	
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
11	NOAM VIP: Establish GUI Session	If not already done so, establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.	
12	NOAM VIP:	Navigate to the Main Menu → Status&Manage → Server	
Perform "NTP Select the standby SOAM server.		Select the standby SOAM server.	
		Select the NTP Sync button at the bottom of the page.	
		Stop Restart Reboot NTP Sync Report	
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.	
13	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA	
	HA Role to Active	Click Edit	
		Edit	
		Set the "Max Allowed HA Role" to Active	
		Active -	
		Wait for Merging and replication related alarms to clear before proceeding.	
14	Standby SOAM: Repeat	Repeat ALL steps in this procedure on the newly active (Formerly Inactive) SOAM.	

Procedure 41: Delete/Modify Export Server IP Addresses: SOAM

S T	This procedure details the steps to modify the export server IP addresses.		
Ē	Check off (\mathbf{v}) each step as it is completed. Boxes have been provided for this purpose under each step number.		
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	SOAM VIP:	Establish a GUI session on the SOAM server, login as guiadmin user.	
	Establish GUI		
	Session		
2	SOAM VIP:	Modify the Export Server addresses by executing the steps in Appendix E: .	
	Modify the Export Server address	Replace the IPv6 addresses with the IPv4 addresses gathered in procedure 1.	

Procedure 42: Delete SOAM TVOE Blade Server IPv6 Addresses and Routes

S T	This procedure details the steps to backout TVOE server IPv6 networks			
E P	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
#		IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
	TVOE Server: SSH to the TVOE Blade Server	Establish an SSH terminal session to the TVOE blade server. Login as <i>admusr</i> . Note: For IPv6 backout on cloud deployments, skip to procedure 43. This procedure it not		
	l	valid for Cloud deployments.		
	TVOE Server: Delete the XMI IPv6	Using the export server data gathered in Procedure 1, enter the new IPv6 address for the XMI bridge inteface using the following command:		
	address.	<pre>\$ sudo netAdm settype=Bridgename=<xmi>address=<ipv6_address>/<ipv6_prefix>deleteAddr</ipv6_prefix></ipv6_address></xmi></pre>		
3	TVOE Server: Verify	Only the old IPv4 IP address should be displayed after entering the following command: \$ sudo netAdm querytype=Bridgename= <xmi></xmi>		
4	TVOE Server: Delete the Netbackup IPv6 address.(<i>Optional</i>)	<pre>\$ sudo netAdm settype=Bridgename=<netbackup> address=<ipv6_address>/<ipv6_prefix>deleteAddr</ipv6_prefix></ipv6_address></netbackup></pre>		
5	TVOE Server: Verify	Only the old IPv4 IP address should be displayed after entering the following command: \$ sudo netAdm querytype=Bridgename= <netbackup></netbackup>		
6	TVOE Server: Delete the default route	Delete the default route: \$ sudo netAdm delete routeroute=defaultdevice= <xmi> gateway=<xmi_ipv6_gateway></xmi_ipv6_gateway></xmi>		

S T	This procedure details the steps to backout TVOE server IPv6 networks		
E P	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
#	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
7	TVOE Server: Delete additional routes if needed	Delete additional routes, if needed: Example: \$ sudo netAdm delete routeroute=netdevice=netbackup address= <netbackup_ipv6_address> netmask=<netbackup_ipv6_netmask> gateway=<netbackup_ipv6_gateway></netbackup_ipv6_gateway></netbackup_ipv6_netmask></netbackup_ipv6_address>	
12	TVOE Server: Configure IPv6 for SNMP and NTP.	Execute Appendix F: TVOE Host SNMP and NTP IPv6 Configuration to Configure the old IPv4 IP addresses for SNMP and NTP on the TVOE blades.	
13 □	TVOE Server: Repeat for 2 nd SOAM Server	Repeat Steps 1-14 for the 2 nd SOAM TVOE Host.	

Procedure 42: Delete SOAM TVOE Blade Server IPv6 Addresses and Routes

3.3.2 NOAM Backout

This section describes the procedures that must be executed on the NOAM to back out the NOAM servers from IPv6 to IPv4 networks.

Procedure 43: Modify/Delete LDAP IPv6 Configuration (Optional)

S T	This procedure details	the steps to back out	the LDAP server IPv6 addresses.		
E P #	Note: If, during the IPv6 back out, it is determined that new IPv6 addresses for external LDAP server(s) are to be deleted, then execute this procedure.				
	Check off ($\sqrt{2}$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	NOAM VIP: Establish GUI Session	Establish a GUI sess	sion on the NOAM server, login as <i>guia</i>	<i>dmin</i> user.	
2	NOAM VIP: Verify IPv4 LDAP Configuration is present	Navigate to the Mai Authentication Verify the old IPv4 If not, use the IPv4 Select the Insert bu Insert LDAP Auth	in Menu → Administration → Remote LDAP configuration is present. information from procedure 1 to insert tton at the bottom of the page to access entication Server	e Servers → LDAP the IPv4 LDAP configuration: the Insert form.	
		Hostname		Unique name for the server. It can be either a valid IPv4 or IPv6 address or a valid hostname. Hostname must be unique and case- insensitive. The length should not exceed 100 characters. Valid hostname characters include alphanumeric characters (a-z), (A-Z), (0-9), period (.), or minus sign (·). The first character of a hostname must be an alpha character. [Range = A 1 - 100 character string.]	
		Account Domain Name		Domain name of the LDAP server. Use following form: <name>.<tld> (ex. oracle.com). [Range = A 1-20 character string. Allowed characters are A-Z, a-z, 0-9 and periods.]</tld></name>	
		Scroll down and sel	ect Ok button to commit the form.		

Procedure 43: Modify/Delete LDAP IPv6 Configuration (Optional)

S T	This procedure details the steps to back out the LDAP server IPv6 addresses.				
Ē	Note: If, during the IPv6 back out , it is determined that new IPv6 addresses for external LDAP server(s) are to be				
г #	deleted, men execute	n execute this procedure.			
	Check off ($$) each step as it	neck off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS	HIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
3	NOAM VIP: Delete the IPv6 LDAP	Navigate to the Main Menu → Administration → Remote Servers → LDAP Authentication			
	Configuration	Select the IPv6 LDAP configuration.			
Click Delete .		Click Delete .			
		Insert Edit Delete Report Move Up Move Down Test Server			
		Select OK to proceed with the deletion.			

Procedure 44: Delete the New IPv6 NOAM Server Group VIP

S T	This procedure will pr	This procedure will provide the instructions how to delete the new NOAM IPv6 VIPs.		
E P #	Check off (√) each step as it IF THIS PROCEDURE FAILS,	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the N	OAM server, login as <i>guiadmin</i> user.	
2	NOAM VIP: Remove any IPv6 VIPs from NOAM Server Group	 Execute this step to remove an IPv6 VIP, if needed: Navigate to the Main Menu → Configuration → Server Groups Select the NOAM server group that needs an IPv6 VIP removed. Select the Edit button at the bottom of the page. The GUI will show the Server Groups Edit form. 		
		VIP Assignment VIP Address 2001:0db8:0000:0000:0000:ff00:0042:8329 10:240.47.68 Select the Remove button to rem Select Ok button to commit the f	Add Remove Remove Ok Apply Cancel ove any IPv6 VIP Address text box. form.	

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S T	I his procedure will provide the instructions how to remove the new IPv6 NTP servers.			
Ē	Theck off (\mathbf{v}) each step as it is completed. Boxes have been provided for this purpose under each step number.			
Р	IF THIS PROCEDURE FAILS,	PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
#				
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.		
	Establish GUI			
-	NOAMUR			
2	NOAM VIP: Remove the IPv6	Execute this step to remove NTP server(s) with IPv6 address, if needed.		
	NTP servers from	Navigate to the Main Menu \rightarrow Configuration \rightarrow Servers.		
	Active NOAM	Select the Active NOAM server to remove an IPv6 addressed NTP server from.		
		Select the Edit button at the bottom of the page. The GUI will show the "Server Edit" form.		
		Note: Notice that only the NTP servers and the System ID are available for edit.		
		NTP Servers:		
		NTP Server IP Address Prefer		
		Remove		
		10.240.47.106		
		Remove		
		Ok Apply Cancel		
		Select the Remove button to remove the IPv6 NTP Server text box.		
		Select the Add button to create the IPv4 NTP Server text box.		
		Enter the old IPv4 NTP server address into the text box.		
		Repeat the above steps if removing additional IPv6 addressed NTP Servers and replacing with old IPv4 addressed NTP Servers.		
		Once all IPv4 NTP Servers have been entered in the Server Edit form, select Ok button to commit the form.		
		Note: Do not execute any NTP Sync operation at this time.		
3	NOAM VIP:	Repeat step 2 above to remove the new IPv6 NTP servers on the standby NOAM server.		
	Remove IPv6 NTP	Upon completion, you will have replaced IDy6 NTD converse with IDy4 NTD converse for each		
	remaining servers	NOAM server.		

		-	
S T	This procedure will provide the instructions how to delete the new IPv6 network routes.		
E P # Note: Depending on network configuration and how much of the topology has been migrated, OAM replica merging will stop during this procedure. Updates to the Network Device and Network Route screens in the will stop until replication and merging are restored. Although the screen will not display up-to-date configu- status, the user may continue to modify devices and routes.			
	Note: The following procedure will first be executed on the Active NOAM, followed by the Standby NOAM.		
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.	
2	NOAM VIP:	If needed, unlock the networks so that IPv6 interfaces can be deleted.	
	Unlock Networks	Navigate to the Main Menu → Configuration → Network	
		Select the one or more networks that have configured interfaces that need to be deleted.	
		Insert Edit Unlock Delete Report	
		Select the Unlock button at the bottom of the page.	
		A Confirmation dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.	
		Your browser session will remain on the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the networks are now unlocked.	
3	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA	
	role to Forced	Click Edit	
	Standby	Edit	
		Set the "Max Allowed HA Role" of the Active NOAM to Standby	
		Max Allowed HA Role	
		Standby -	
		Note: A switch-over will occur, where the formally standby NOAM server will become the active server. You will be logged out of the browser GUI.	
		Login again to the NOAM VIP as guiadmin user.	

S T	This procedure will pr	ovide the instructions how to delete the new IPv6 network routes.	
E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication a merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.		
	Note: The following p	rocedure will first be executed on the Active NOAM, followed by the Standby NOAM.	
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
4	Remove an IPv6	Execute this step to remove an IPv6 route, if needed.	
	route	Navigate to the Main Menu → Configuration → Network → Routes	
		Select the server or server group to delete an IPv6 route from.	
		Insert Edit Delete Report Report All	
		Select the Delete buttom of the bettern of the more	
		Select the Delete button at the bottom of the page.	
5	Remove remaining	Repeat step 4 above to remove the remaining IPv6 network routes added	
	IPv6 routes	Upon completion, you will have removed all IPv6 network routes for each application	
		server.	
6	NOAM VIP: Delete the VLAN tagged	Execute this step to delete a VLAN tagged IPv6 address from an existing device interface. If deleting an un-tagged VLAN interface, skip to step 7 .	
	IPv6 interfaces from the NOAM servers	Navigate to the Main Menu → Configuration → Network → Devices	
		Select the tab for the standby NOAM server to have IPv6 interfaces deleted.	
		Now select the Device Name that corresponds to the VLAN Id of the network you are deleting.	
		Select the Edit button at the bottom of the page. The GUI will show the Devices Edit form.	
		General Options MII Monitoring Options ARP Monitoring Options IP Interfaces	
		IP Address List: Add Row	
		1000:0000:ff00:0042:8329 Network Name Remove	
		10.240.50.66 XSI2 (10.240.50.64/26)	
		Remove	
		In the form, select the IP Interfaces tab.	
		Select the Remove button to remove the new IPv6 address.	
		Select Ok button to commit the form.	
		Repeat this step for all IPv6 interfaces on the standby NOAM server.	

_			
S T	This procedure will pr	ovide the instructions how to delete the new IPv6 network routes.	
E P #	Note: Depending on n merging will stop duri will stop until replication status, the user may co	etwork configuration and how much of the topology has been migrated, OAM replication and ng this procedure. Updates to the Network Device and Network Route screens in the GUI ion and merging are restored. Although the screen will not display up-to-date configuration ontinue to modify devices and routes.	
	Note: The following procedure will first be executed on the Active NOAM, followed by the Standby NOAM		
Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
7	NOAM VIP: Delete a new un-tagged	Execute this step to delete an un-tagged VLAN IPv6 addressed device interface. If deleting a new VLAN tagged interface from an existing interface, skip this step and return to step 9 .	
	interface from the	Navigate to the Main Menu → Configuration → Network → Devices	
	NOAMP servers (SDS Only)	Select the tab for the standby NOAMP server to have IPv6 interfaces deleted.	
		Insert Edit Delete Report All Take Ownership	
		Select the Delete button at the bottom of the page.	
		Select Ok button to commit the form.	
		Repeat this step for all IPv6 interfaces on the standby NOAMP server.	
		Then, repeat this step for the active NOAMP servers with non-VLAN IPv6 interfaces.	
8	NOAM VIP: Lock	Lock all networks now that all standby NOAM IPv6 interfaces have been deleted.	
	INCLWOIRS	Navigate to the Main Menu → Configuration → Network	
		Select the network or networks to lock.	
		Select the Lock button at the bottom of the page.	
		Insert Edit Lock Delete Report	
		A "Confirm" dialog box will pop up. Select "check to confirm" and then select OK to continue.	
		Your browser session will be taken back to the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the network(s) maked as " <i>Locked=Yes</i> ".	

S T	This procedure will pro-	ovide the instructions how to delete the new IPv6 network routes.	
E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.		
	Note: The following p	rocedure will first be executed on the Active NOAM, followed by the Standby NOAM.	
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
9	NOAM : Restart	Establish an SSH session to the NOAM, login as <i>admusr</i> .	
	ComCol and Restore OAM replication and Merging	Execute the following command to restart ComCol and restore OAM replication and merging:	
		<pre>\$ sudo rcstool co /var/named/db.platform.cgbu.us.oracle.com</pre>	
		<pre>\$ sudo sed -i /`hostname`.*AAAA/d /var/named/db.platform.cgbu.us.oracle.com</pre>	
		Verify the command above was successful by executing the following command:	
		<pre>\$ sudo grep AAAA /var/named/db.platform.cgbu.us.oracle.com</pre>	
		Note: There should be no hostname AAAA records in the output. If there was no output regarding hostname AAAA, proceed with the following commands:	
		<pre>\$ sudo rcstool ci /var/named/db.platform.cgbu.us.oracle.com</pre>	
		<pre>\$ sudo rndc reload</pre>	
		<pre>\$ sudo /usr/TKLC/appworks/bin/awntpcfg -synconly -force</pre>	

-					
	S T	This procedure will provide the instructions how to delete the new IPv6 network routes.			
	E P #	Note: Depending on network configuration and how much of the topology has been migrated, OAM replication and merging will stop during this procedure. Updates to the Network Device and Network Route screens in the GUI will stop until replication and merging are restored. Although the screen will not display up-to-date configuration status, the user may continue to modify devices and routes.			
		Note: The following procedure will first be executed on the Active NOAM, followed by the Standby NOAM.			
		Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
		IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE. 10 NOAM : Verify ComCol replication is using working and using IPv4 Perform the following command to verify ComCol IP connections are using IPv4: \$ sudo proctcpstat Expected output: 		<pre>Perform the following command to verify ComCol IP connections are using IPv4: \$ sudo proctcpstat Expected output: </pre>			
			<pre>::1:45461 ==> ::1:17402 ::1:45460 ==> ::1:17402 Perform the following command to verify ComCol merging link states: \$ sudo inetmstat [admusr@NOAM-2 ~]\$ sudo inetmstat nodeId InetMerge State dir dSeq dTime updTime info NOAM-1 Standby To 0 0.00 15:47:44 SOAM-1 Active From 0 0.00 15:47:44 SOAM-1 Standby From 0 0.00 15:47:44 SOAM-2 Active From 0 0.00 15:47:44 </pre>		

S T	This procedure will provide the instructions how to delete the new IPv6 network routes.		
E P #	Note: Depending on merging will stop durin will stop until replicati status, the user may co	etwork configuration and how much of the topology has been migrated, OAM replication and ng this procedure. Updates to the Network Device and Network Route screens in the GUI ion and merging are restored. Although the screen will not display up-to-date configuration ontinue to modify devices and routes.	
	Note: The following procedure will first be executed on the Active NOAM, followed by the Standby NOAM.		
	Check off ($$) each step as it	is completed. Boxes have been provided for this purpose under each step number.	
	IF THIS PROCEDURE FAILS,	CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.	
11	NOAM VIP: Establish GUI Session	If not already done so, establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.	
12	NOAM VIP:	Navigate to the Main Menu → Status&Manage → Server	
	Perform "NTP Svnc"	Select the standby NOAM server.	
		Select the NTP Sync button at the bottom of the page.	
		Stop Restart Reboot NTP Sync Report	
		A Confirmation dialog box will pop up asking if you are sure you want to continue with the NTP Sync. Select OK to continue.	
13	NOAM VIP: Set	Navigate to the Main Menu → Status&Manage → HA	
	HA Role to Active	Click Edit	
		Edit	
		Set the "Max Allowed HA Role" to Active	
		Active -	
		Wait for Merging and replication related alarms to clear before proceeding.	
14	Standby NOAM: Repeat	Repeat ALL steps in this procedure on the newly active (Formerly Inactive) NOAM.	

Procedure 47: Modify SNMP Managers IP Addresses

S	This procedure details the steps to modify the SNMP Manager IP addresses. Note: If IPv6 SNMP Servers were configured, execute this procedure.		
E			
Р #	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My oracle supp	ort (MOS) and ask for assistance.
1	NOAM VIP:	Establish a GUI session on the NOA	M server, login as <i>guiadmin</i> user.
	Session		
2	NOAM VIP: Modify the SNMP	Navigate to the Main Menu → Adm	ninistration \rightarrow Remote Servers \rightarrow SNMP Trapping
	Manager(s)	Manager 1	
		Manager 2	
		Manager 3	
		Manager 4	
		Manager 5	
		Enter the IPv4 addresses for the SNN Scroll down and select Ok button to	AP Managers in the Manager text fields in the form. commit the form.

Procedure 48: Modify Customer DNS Configuration

a		.1 1		
S T	This procedure details	This procedure details the steps to modify the DNS server if addresses.		
т Е Р	Note: If IPv6 DNS Servers were configured, execute this procedure.			
#	Check off ($$) each step as it	is completed. Boxes	have been provided for this purpose under	er each step number.
	IF THIS PROCEDURE FAILS	S. CONTACT ADDE	ndix H: My oracle support (MC	S) AND ASK FOR ASSISTANCE.
		-,	·····) ····· ···· ···· ····· ·····	-,
1	NOAM VIP:	Establish a GU	I session on the NOAM server, lo	gin as <i>guiadmin</i> user.
	Establish GUI			
	Session			
2	NOAM VIP:	Navigate to the	Main Menu → Administration	\rightarrow Remote Servers \rightarrow DNS
	Modify the customer	Configuration		
	DINS server(s)	Enter the IPv4	addresses for the customer DNS s	servers in the address text fields in the form.
		Svetem Domain		
		System Domain	Domain Name	Description
		Domain	500lab.com	System Domain Name. (e.g. yourdomain.com) [Ma
		External DNS Name	e Server	
			Address	Description
		Name Server	10.250.51.116	Address of external DNS name server. [Must be a v
		Domain Search Or	der	
			2omain Name	Description
		Search Domain 1	500lab.com	A valid domain name. [May only contain alphnumer
		Search Domain 2	platform.cgbu.us.oracle.com	A valid domain name. [May only contain alphnumeri
		Search Domain 3	labs.tekelec.com	A valid domain name. (May only contain alphnumeri
		Search Domain 4	labs.nc.tekelec.com	A valid domain name. [May only contain alphnumer
		Search Domain 5		A valid domain name. [May only contain alphnumeri
		Search Domain 6		A valid domain name. [May only contain alphnumeri
				Ok Cancel
		Scroll down an	d select Ok button to commit the	form

Procedure 49: Modify Export Server IP Addresses: NOAM

S T	This procedure details	the steps to modify the export server IP addresses.	
Ē	Note: If IPv6 Export Servers were configured, execute this procedure		
P #	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
1	NOAM VIP:	Establish a GUI session on the NOAM server, login as guiadmin user.	
	Establish GUI		
	Session		
2	NOAM VIP:	Modify the Export Server addresses by executing the steps in Appendix E:	
	Modify the Export		
]	Server address		

3.3.3 TVOE, OAM, PMAC, System Switches Backout

Procedure 50: Delete IPv6 TVOE management interfaces and routes

S T E	This procedure describes the backout procedures related to deletion of IPv6 TVOE management and OAM interfaces			
P	Check off ($\sqrt{2}$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
#	IF THIS PROCEDURE FAIL	IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE.		
1	TVOE Server:	Establish an SSH terminal connection with the TVOE server, login as admusr .		
	connection	Note: For IPv6 backout on cloud deployments, skip to procedure 53. This procedure is not valid for cloud deployments.		
2	TVOE Server:	If the management bridge was migrated to IPv6 (i.e PMAC server), complete this step:		
	Interfaces	List the management bridge:		
		<pre>\$ sudo netAdm querytype=Bridgename=management</pre>		
	Delete the mangement bridges:			
		<pre>\$ sudo netAdm settype=Bridgename=managementaddress=<ipv6_address>/<ipv6_prefix>deleteAddr</ipv6_prefix></ipv6_address></pre>		
3	TVOE Servers: Delete TVOE IPv6 management	Where configured on TVOE servers (i.e PMAC server), delete any management default routes.		
	default routes	Check for management IPv6 route configuration by executing the following command. \$ sudo netAdm queryroutedevice=management		
		Delete XMI routes by executing the following command:		
		<pre>\$ sudo netAdm delete routeroute=defaultdevice=managementgateway=<ipv6_address></ipv6_address></pre>		

Procedure 50: Delete IPv6 TVOE management interfaces and routes

S T P #	 This procedure describes the backout procedures related to deletion of IPv6 TVOE management and OAM interfaces Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT ORACLE TECHNICAL SERVICES AND ASK FOR ASSISTANCE. 	
4	4 TVOE Server: List the XMI bridge: □ Delete TVOE IPv6 \$ sudo netAdm querytype=Bridgename=xmi ↓ Sudo netAdm settype=Bridgename=xmi ↓ \$ sudo netAdm settype=Bridgename=xmi ↓ address= <ipv6 address="">/<ipv6 prefix="">deleteAddr</ipv6></ipv6>	
5	TVOE Servers: Delete TVOE IPv6 XMI default routes	<pre>Where configured on blade servers, delete any XMI default routes from the TVOE blade servers. Check for XMI IPv6 route configuration by executing the following command. \$ sudo netAdm queryroutedevice=xmi Delete XMI routes by executing the following command: \$ sudo netAdm delete routeroute=defaultdevice=xmigateway=<ipv6_address></ipv6_address></pre>

Procedure 51: Delete IPv6 networks on system switches, OA/iLO, and PMAC

S T E P	This procedure describes the backout procedures related to system switches, OAs, and the PMAC Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
#	IF THIS PROCEDURE FAIL	S, CUNTACT UKACLE TECHNICAL SERVICES AND ASK FUR ASSISTANCE.				
1	Backout of system	Execute all necessary procedures from [1] to backout all IPv6 system switches, OA/iLOs,				
	switches, OA/iLO,	and PMAC.				
	and PMAC					

3.3.4 DR-NOAM Backout

This section describes the procedures that must be executed on the NOAM to back out the DR-NOAM servers from IPv6 to IPv4 networks.

Procedure 52: Perform IPv6 Backout on DR-NOAMs

S T	This procedure details the steps to backout the DR-NOAMs from IPv6 to IPv4				
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.				
P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.				
1	DR-NOAM	Repeat Procedures 45-51 to backout the DR-NOAMs from IPv6 to IPv4.			
		Note: For IPv6 backout on cloud deployments, skip to procedure 53. This procedure is not valid for cloud deployments.			

3.3.5 *iDIH Backout*

This section describes the procedures that must be executed on the iDIH to back out the iDIH servers from IPv6 to IPv4 networks.

Procedure 53: Perform IPv6 Backout on iDIH servers

	·					
S T	This procedure details the steps to backout the iDIH servers from IPv6 to IPv4					
Е	Check off ($\sqrt{2}$) each step as it is completed. Boxes have been provided for this purpose under each step number.					
P #	IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT (MOS) AND ASK FOR ASSISTANCE.					
1	iDIH Guest virsh console or Cloud	On the mediation guest virsh console, Use the netAdm command to delete the IPv6 default route.				
	Console: Use the netAdm command to delete the IPv6 default route.	<pre>\$ sudo netAdm deleteroute=default \gateway=<ipv6 address="" default="" route=""> \device=<management interface="" or="" xmi=""></management></ipv6></pre>				

Procedure 53: Perform IPv6 Backout on iDIH servers

110							
S T	S This procedure details the steps to backout the iDIH servers from IPv6 to IPv4						
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.						
P #	IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT (MOS) AND ASK FOR ASSISTANCE.						
2	iDIH Guest virsh console Cloud Console: Use the netAdm command to delete IPv6 address.	On the mediation guest console, Use the netAdm command to delete the IPv6 address on the management or xmi interface. \$ sudo netAdm setdevice= <management interface="" or="" xmi=""> \ address=<ipv6 address="">/<ipv6_prefix> \ deleteAddr Interface management updated Note: The following command should only be run on the mediation guest, and only if you intend to delete the IPv6 medation imi address. \$ sudo netAdm setdevice=<imi interface=""> \ address=<ipv6 address="">/<ipv6_prefix> \ deleteAddr Interface management updated</ipv6_prefix></ipv6></imi></ipv6_prefix></ipv6></management>					
3	Procedure Overview	Repeat Steps 1 and 2 for the following VMs. Be sure to perform the repeated steps in the order listed below, I.E. update the application guest then the oracle guest .					
4		Dran a terminal window and log in as admuse on the iDUL Application server					
4	iDIH Application	Open a terminal window and log in as admust on the 1DIH Application server.					
	Use the application	Enter the plotofa monu. As admuser run:					
	ose the application	Enter the plateig menu. As admusi, fun.					
	the SNMP servers IPv6 address with an IPv4 address.	\$ sudo su - platcfg					
		Select Application Server Configuration > SNMP Agent Configuration.					
		A window appears which allows you to enter the IPv4 address of the SNMP management platform and version of SNMP agent and traps.					
		Select Edit					
		Type the appropriate values and click OK .					
		The SNMP agent configuration is updated and the SNMP Management server is automatically restarted.					
		Exit the platcfg menu.					

Procedure 53: Perform IPv6 Backout on iDIH servers

S T	This procedure details the steps to backout the iDIH servers from IPv6 to IPv4						
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.						
P #	IF THIS PROCEDURE FAILS, CONTACT MY ORACLE SUPPORT (MOS) AND ASK FOR ASSISTANCE.						
5	Configure DSR Open a terminal window and log in as admusr on the iDIH Application server.						
	Reference Data Issue the following commands to login as tekelec user.						
	Synchronization \$ sudo su - tekelec						
	for IDIH (DSR 7.1-						
	Optional): <pre>Shostname>:/usr/TKLC/xTH_apps/trda-config_sh</pre>						
	Use the script to						
	update the SOAM NOTE: While prompted "Please enter DSR SOAM server IP address", enter the VIP						
	server with an IPv4 DSR SOAM and press Enter.						
	address.						
6	Connect to the NOAM GUI navigate to the communication menu and remove the IPv6 imi						
	Configure the iDIH address of the iDIH mediation guest.						
	comAgent						
	connection on the Communication Agent -> Configuration -> Remote Servers						
	NOAM.	JAM. Select the iDIH Mediation guest and edit					
		Remove the "imi iDIH mediation IPv6 guest address".					
		Note: Make sure perferred Ipv4 has been selected as the prefered comAgent network					
		selection.					
7	SOAN CHI	Construction Contraction of the Direction of the Decomposition of the De					
	7 SOAM GUI: Connect the SOAM GUI navigate to the Diameter menu and replace the IPv6						
Configure the xmi/management address of the iDIH Application guest with its IPv4 address.							
	"I roubleshooting	Diameter \rightarrow Troubleshooting with IDIH \rightarrow Configuration \rightarrow Options					
	on the SOAM	Standool / Houstonooling with Ibin / Configuration / Options					
	on the SUAM.						
	Select iDIH and replace the IPv6 address with the "iDIH application guest IPv4						
	xmi/management address".						

APPENDIX A: ADD THE NEW IPV6 NETWORKS.

Image: Signal and Signa

Appendix A: Add New IPv6 Networks

Appendix A: Add New IPv6 Networks

	This was as down sould as			add the mean ID-C meters also			
S	This procedure will provide the instructions how to add the new IPv6 networks.						
T	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.						
Ē							
P #							
Ħ							
2 NOAM VIP: Navigate to the Main Menu \rightarrow Configuration \rightarrow Network							
	nsert an IPv6 network	Select the Insert button at the bottom of the page. The GUI will show the Network					
		Insert form.					
		Main Menu: Configuration -> Network [Edit]					
		Edit Networ					
		Field	Value	Description			
		Network Name	INTERNALXMI	The name of this network. [Default = N/A. Range = Alphanumeric s			
		Network Element	Compass_SO	The network element this network is a part of if not specified, the r			
		Network Address	2606;b400;605;b810;;	The network address of this network. [Default = N/A. Range = Valid			
		Netmask	/64	format.] Subnetting to apply to servers within this network. [Default = N/A. F			
		Router IP	FE80::5:73FF:FEA0:3	decimal (IPV4) format.) The IP address of a router on this network. If this is a default netwo			
		Default Network	Yes	A selection indicating whether this is the network with a default ga			
		Poutable	•Yes	Whether or not this network is routable outside its network elemen			
		(outable	No	in all network elements.			
		 Network name (<i>XMI</i>, <i>IMI</i>,)-**Same names as existing IPv4 networks** Network Element accepted with the network (This must metch the existing) 					
		• Retwork Element associated with the network (This must match the existing IPv4 network)					
		VLAN Id					
		• Network IP address,					
		• Netmask in a CIDR format (<i>example: /96</i>)					
		• The router IP address on the network					
		• Select whether or not it is a default network (For XMI, select Yes)					
		• Select whether or not it is a routable network (This must match the existing IPv4 network)					
		Select Ok button to commit the form.					
		A " <i>Confirm Edit</i> " dialog box will pop up. Select " <i>check to confirm</i> " and then select OK to continue.					
		Your browser session will be taken back to the Main Menu \rightarrow Configuration \rightarrow Network page and in the grid you will see the newly added network.					
		Note: It is names as t	important that all t he existing IPv4 ne	he new IPv6 networks entered have the same network tworks.			

Appendix A: Add New IPv6 Networks

	This procedure will provide the instructions how to add the new IPv6 networks.						
$\begin{bmatrix} S \\ T \end{bmatrix}$ Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each						r each step number.	
E P #	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.						
3	NOAM VIP: Verify Network Verify Network Verify the IPv6 networks added in step 3 match the existing IPv4 networks						
Main Menu: Configuration -> Network							
		Network Name	Locked	Routable	VLAN	Network	
		ХМІ	Yes	Yes	7	10.240.158.128/25	
		IMI	Yes	Yes	23	192.168.2.0/25	
		xsi1	No	Yes	8	fd0d:deba:d97c:ec0::/64	
		xsi2	No	Yes	9	fd0d:deba:d97c:ec1::/64	
		ХМІ	Yes	Yes	7	2606:b400:605:b804::/64	
		ІМІ	Yes	No	23	fdbd:aaec:587c:6efb::/64	
4	NOAM VIP: Insert Remaining IPv6 Networks	OAM VIP: sert Remaining V6 NetworksRepeat steps 2-3 above to insert the remaining IPv6 networks gathered in Procedure 1 Upon completion, you will have entered one or more IPv6 networks for the NOAM Network Element, and one or more IPv6 networks for each SOAM Network Element.					
APPENDIX B: CONFIGURE NEW IPV6 NETWORK ROUTES

Appendix B: Configure New IPv6 Network Routes

S	This procedure will pr	ovide the instructions how to a	dd the new IPv6 network routes.	
Т Е Р #	Note: Not all installations will require additional routes. Execute this procedure if data gathered in Procedure 1 indicates that IPv6 routes are needed. For example, routes would be required between IPv6 networks in different Network Elements.			
	Check off (\checkmark) each step as it	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS,	CONTACT Appendix H: My orac	cle support (MOS) and ask for assistance.	
	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.		
2	NOAM VIP: Insert	Execute this step to add an IF	Pv6 route, if needed.	
	an IPv6 Route	Navigate to the Main Menu	\rightarrow Configuration \rightarrow Network \rightarrow Routes	
		Select the first server to add a	a IPv6 route.	
		Select the Incert button at the	a bottom of the page. The GUI will show the " Route Insert "	
		form.	e bouon of the page. The OOT will show the Route Insert	
		Field Value	Description	
		 ○ Net Route Type ○ Default ○ Host ● 	Select a route type. [Default = N/A. Options = Net, Default, Host. You can configure at most one IPV4 default route and one IPV6 default route on a given target machine.]	
		Device - Select Device - 🔻 •	Select the network device name through which traffic is being routed. The selction of AUTO will result in the device being selected automatically, if possible. [Default = N/A. Range = Provisioned devices on the selected server.	
		Destination	The destination network address. [Default = N/A. Range = Valid Network Address of the network in dotted decimal (IPv4) or colon hex (IPv6) format.]	
		Netmask	A valid netmask for the network route destination IP address. [Default = N/A. Range = Valid Netmask for the network in prefix length (IPv4 or IPv6) or dotted decimal (IPv4) format.]	
		Gateway IP	The IP address of the gateway for this route. [Default = N/A. Range = Valid IP address of the gateway in dotted decimal (IPv4) or colon hex (IPv6) format.]	
			Ok Apply Cancel	
		Enter the IPv6 network route	information using the data gathered in Procedure 1:	
		• Route type sele	ction – Network, Default, or Host	
		• Select the devic	te to be used for the route	
		• The IPv6 destin	ation network address	
		• The Netmask for	or the network route destination IP address	
		• The IPv6 gatew	yay address.	
		Select Ok button to commit t	he form.	
3	NOAM VIP: Insert Remaining IPv6 Routes	Repeat step 2 above to insert Procedure 1.	the remaining IPv6 network routes using data gathered in	

APPENDIX C: ADD THE NEW IPV6 NTP SERVERS

Appendix C: Add New IPv6 NTP Servers

S T P #	This procedure will pr Note: Not all installati gathered in Procedure WARNING: Do <i>NOT</i> The NTP Sync action daemon. Check off (√) each step as in	ovide the instructions how to add the new IPv6 NTP servers. ions will require new NTP servers to be added to each Server. Execute this procedure if data 1 indicates that IPv6-addressed NTP servers are needed. 7 execute a " <i>NTP Sync</i> " from the Main Menu → Status&Manage → Server at this time. is service-effecting - doing so will temporarily stop DSR processes, as well as restart the NTP t is completed. Boxes have been provided for this purpose under each step number.
	IF THIS PROCEDURE FAILS,	, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
1	NOAM VIP: Establish GUI Session	Establish a GUI session on the NOAM server, login as <i>guiadmin</i> user.
2	NOAM VIP: Insert	Execute this step to add NTP server(s) with IPv6 address, if needed.
	Servers	Navigate to the Main Menu \rightarrow Configuration \rightarrow Servers .
		Select the first server to add a IPv6 addressed NTP server.
		Select the Edit button at the bottom of the page. The GUI will show the <i>"Server Edit"</i> form. Notice that only the NTP servers and the System ID are available for edit.
		NTP Servers:
		NTP Server IP Address Prefer
		Remove
		10.240.208.1 V Remove
		Ok Apply Cancel
		Enter the IPv6 NTP server information using the data gathered in Procedure 1:
		• Select the Add button to create a new blank NTP Server text box,
		• Enter the IPv6 NTP Server IP address
		• Optionally, if you want the new NTP entry to be marked as " <i>Prefer</i> ", then select the checkbox.
		Repeat the above steps if adding additional IPv6 addressed NTP Servers.
		Once all new NTP Servers have been entered in the <i>"Server Edit"</i> form, select Ok button to commit the form.
		Note: Do not execute any NTP Sync operation at this time.

Appendix C: Add New IPv6 NTP Servers

S T E P #	 This procedure will provide the instructions how to add the new IPv6 NTP servers. Note: Not all installations will require new NTP servers to be added to each Server. Execute this procedure if data gathered in Procedure 1 indicates that IPv6-addressed NTP servers are needed. WARNINC: Do NOT execute a "NTP Sync" from the Main Menu → Status&Manage → Server at this time. 			
	The NTP Sync action is service-effecting - doing so will temporarily stop DSR processes, as well as restart the NTP daemon.			
	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
	IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.			
3	Insert IPv6 NTP	Repeat steps 2 and 3 above to add the new IPv6 NTP servers to the remianing servers using		
	servers for the	data gathered in Procedure 1.		
	remaining servers			
		Upon completion, you will have entered one or more IPv6 NTP servers for each application		
		server.		

APPENDIX D: MODIFY EXPORT SERVER IP ADDRESSES

Appendix D: Modify Export Server IP Addresses

S	This procedure details	the steps to modify th	e export server IP addresses on	the NOAM or SOAM Servers
T E	Check off ($$) each step as i	t is completed. Boxes have b	been provided for this purpose under each	ch step number.
P #	IF THIS PROCEDURE FAIL	s, contact Appendix	H: My oracle support (MOS)	AND ASK FOR ASSISTANCE.
1	NOAM/SOAM VIP: Establish GUI Session	Establish a GUI sess	ion on the NOAM/SOAM serve	er, login as <i>guiadmin</i> user.
2	SOAM VIP:	Navigate to the Mai	n Menu \rightarrow Administration \rightarrow	Remote Servers → Data Export
	Server address	Configure an Expo	ort Server	
		Attribute	Value	Description
		Hostname		Name of export server. [Must be a valid hostname, IPv4 address, or IPv6 address. Hostname should not exceed 24 characters. Valid hostname characters are alphanumeric, minus sign and period. Hostname must start with an alphanumeric and end with an alphanumeric. The top level domain (TLD) must be alphabetic. Specify an empty hostname and username to clear the current export server and remove the file transfer task.]
		Username		Username to use to access the export server [Range = A 32-character string. Valid username characters are alphanumeric. Specify an empty hostname and username to clear the current export server and remove the file transfer task.]
		Using the export serve external export serve Scroll down and sele	ver data gathered in Procedure 1 er in the Hostname text field in t ect Ok button to commit the for	I, enter the new IPv6 addresses for the the form.
3	NOAM VID.	From Main Manu -	> Administration -> Pomote S	arvars -> Data Evnort
	Perform Key Exchange	Click SSH Key Exc	hange	ervers -> Data Export
		SSH Key Exchange	Test Transfer Keys Report	
		Enter the password of	of the remote server:	
		SSH Key Exchange	\otimes	
		Password: OK Ca	ncel	

Appendix D: Modify Export Server IP Addresses

S	This procedure details	the steps	to modify the	export server IP ad	ldresses or	the NOAM or SOAM	Servers	
E E	Check off ($$) each step as it	is complet	ed. Boxes have be	een provided for this pur	pose under e	ach step number.		
Р #	IF THIS PROCEDURE FAILS	S, CONTAC	T Appendix H	I: My oracle suppo	ort (MOS)	AND ASK FOR ASSISTANCI	≣.	
4	NOAM VIP: Verify	From N	/Iain Menu ->	Administration ->	> Remote	Servers -> Data Expor	rt	
	Export Server	Click T	est Transfer			-		
		SSH Key	Exchange Transfe	r Now Test Transfer Ke	eys Report			
		Verify	from the Tasks	s drop down that the	e Remote S	Server Copy function su	cceeded:	
	Main Menu: Administration -> Remote Servers -> Data Export							
		Status	- Tasks -					
		Tacke						8
		ID	Hostname	Namo	Tack State	Details	Drogross	
		10	nostilaine	ADDE Domoto Conver	Task state	Details	Flogress	
		1048	Compass-NOB	Copy	completed	Success - 1 file(s) transferred.	100%	
		1046	Compass-NOB	APDE Remote Server Copy	completed	Success - 1 file(s) transferred.	100%	
		•						

APPENDIX E: BACKUP TVOE CONFIGURATION

Appendix E: Backup TVOE Configuration

S T P #	This procedure will provide instruction on how to back up each TVOE rack mount server or Blade server after a successful installation. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number.		
	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.	
1	Identify Backup Server	Identify an external server to be used as a backup server for the following steps. The server should not be co-located with any of the following items: • TVOE • PMAC • DSR/SDS NOAM • DSR/SDS SOAM	
2	TVOE Server: Login	Establish an SSH session to the TVOE host server, login as <i>admusr</i> .	

Appendix E: Backup TVOE Configuration

S T E	This procedure will pr successful installation	ovide instruction on how to back up each TVOE rack mount server or Blade server after a .
P #	Check off (\mathbf{v}) each step as i	t is completed. Boxes have been provided for this purpose under each step number.
	IF THIS PROCEDURE FAIL	S, CONTACT Appendix H: My oracle support (MOS) and ask for assistance.
3	TVOE Server: Build ISO backup file	Execute the following command from the TVOE server: sudo su - platofg y

Appendix E: Backup TVOE Configuration

S T P #	This procedure will provide instruction on how to back up each TVOE rack mount server or Blade server after a successful installation. Check off (√) each step as it is completed. Boxes have been provided for this purpose under each step number. IF THIS PROCEDURE FAILS, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
4	Backup Server: Transfer TVOE Files to Backup Server	Login to the backup server identified in step 1 and copy backup image to the customer server where it can be safely stored. If the customer system is a Linux system, please execute the following command to copy the backup image to the customer system. \$ sudo scp tvoexfer@<tvoe address="" ip="">:backup/*</tvoe> /path/to/destination/ When prompted, enter the tvoexfer user password and press Enter. The TVOE backup file has now been successfully placed on the backup server.	
5	Repeat for Additional TVOE Servers	Repeat steps 3-4 for additional TVOE servers	

APPENDIX F: TVOE HOST SNMP AND NTP IPV6 CONFIGURATION

Appendix F: TVOE Host SNMP and NTP IPv6 Configuration

S T P #	This procedure details Check off (√) each step as i IF THIS PROCEDURE FAIL	the steps to configure SNMP and NTP on a TVOE Host. t is completed. Boxes have been provided for this purpose under each step number. s, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
	TVOE Server: Platcfg	Execute the following to enter platcfg menu: # sudo su - platcfg Platform Configuration Utility 3.05 (C) 2003 - 2011 Tekelec, Inc. Hostname: hostname1322597482 Main Menu Diagnostics Server Configuration Exit Use arrow keys to move between options <enter> selects <f12> Main Menu</f12></enter>

Appendix F: TVOE Host SNMP and NTP IPv6 Configuration

S T	This procedure details	the steps to configure SNMP and NTP on a TVOE Host.		
Ē	Check off ($$) each step as it is completed. Boxes have been provided for this purpose under each step number.			
P #	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.		
P # 2 □	IF THIS PROCEDURE FAILS TVOE Server: IPv6 NMS Configuration	 s, contact Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE. Navigate to Network Configuration -> SNMP Configuration -> NMS Configuration Image: State of the state		
		Once Done, press Exit to quit to the platcfg main menu.		

Appendix F: TVOE Host SNMP and NTP IPv6 Configuration

S	This procedure details	the steps to configure SNMP and NTP on a TVOE Host.
Т		
E	Check off (\mathbf{n}) each step as it	t is completed. Boxes have been provided for this purpose under each step number.
г #	IF THIS PROCEDURE FAILS	S, CONTACT Appendix H: My oracle support (MOS) AND ASK FOR ASSISTANCE.
3	TVOE Server: IPv6 NTP Configuration	Navigate to Network Configuration Main Menu Maintenance Diagnostics Server Configuration Remote Consoles Network Configuration Exit
		Navigate to Configuration->NTP Click Edit
		 Edit Time Servers ntpserver1: 10.250.32.10 ntpserver2: 10.250.88.11 ntpserver3: 10.250.44.22 ntppeerA: ntppeerB: OK Cancel OK Cancel Intpserver1:Edit the customer provided NTP server #1 IPv6 address. ntpserver2: Edit the customer provided NTP server #2 IPv6 address. ntpserver3: Edit the customer provided NTP server #3 IPv6 address. Press OK

APPENDIX G: XMI CONFIGURATION ON AGGREGATION SWITCHES (TOPOLOGY 1 ONLY)

S T	This procedure details	the steps to modify the aggregation switch (<i>Topology 1 Only</i>) for IPv6 for XMI.
E	Note: This step should	be executed after all steps in <i>procedure 1</i> of [1] have been completed.
Р #	Check off (1) each step as it	t is completed. Boxes have been provided for this purpose under each step number.
1	PMAC • Login	S, CONTACT Appendix H. My oracle support (MOS) AND ASK FOR ASSISTANCE.
	Living Cologin	
2	PMAC: Set the	Using the device names collected in <i>procedure 1</i> of [1], execute the following command
	XMI gateway Interface of the	with the XMI VLAN ID to set the XMI gateway to IPv6:
	Aggregation Switch	<pre>\$ sudo netConfigdevice=<name> setInterface interface=VLAN</name></pre>
	to IPv6	<xmi_vlan_1d> 1p=<device_1pv6_address>/<prefix></prefix></device_1pv6_address></xmi_vlan_1d>
3	PMAC • Set the	Execute the following command with the Customer OAM VI AN ID to set the customer
	Customer facing	facing OAM interface to IPv6:
	OAM Interface of	\$ sudo netConfigdevice= <name> setInterface interface=VLAN</name>
	Switch to IPv6	<pre><cust_oam_vlan_id> ip=<device_ipv6_address>/<prefix></prefix></device_ipv6_address></cust_oam_vlan_id></pre>
4	PMAC: Verify	Execute the following commands to verify IPv6 configuration for the XMI gateway and
	IPv6 Interface	customer OAM interface:
	Configuration	<pre>\$ sudo netConfigdevice=<name> getInterface interface=VLAN <xmi_vlan_id></xmi_vlan_id></name></pre>
		<pre>\$ sudo netConfigdevice=<name> getInterface interface=VLAN <cust_oam_vlan_id></cust_oam_vlan_id></name></pre>
		Note: If the incorrect IPv6 interface was entered, execute the following sequence of commands:
		<pre>\$ sudo netConfigdevice=<name> deleteInterface interface=VLAN <xmi_vlan_id> ip=<device_ipv6_address>/<prefix></prefix></device_ipv6_address></xmi_vlan_id></name></pre>
		Now repeat steps 2 or 3 depending on the interface.

S	This procedure details the steps to modify the aggregation switch (<i>Topology 1 Only</i>) for IPv6 for XMI.	
Т Е Р #	Note: This step should be executed after all steps in <i>procedure 1</i> of [1] have been completed. Check off $()$ each step as it is completed. Boxes have been provided for this purpose under each step number.	
5	PMAC: Add the	Layer 3 aggregation switches typically use Virtual Routing when configured as Layer 3
	virtual route for	devices. If an IPv4 virtual route exists, an IPv6 one must also be defined.
	XMI and customer	
	OAM	Using the VR group and tracking IDs collected in <i>procedure 1</i> of [1], execute the same command on both mated aggregations switches for all required VLANs (<i>active or standby states do not need to be examined; execute in either order</i>):
		XMI:
		<pre>\$ sudo netConfigdevice=<name> addVR interface=VLAN<xmi_vlan_id> id=<groupid> track=<trackid> addrType=autoconfig priority=100 preempt=yes</trackid></groupid></xmi_vlan_id></name></pre>
		Customer OAM: \$ sudo netConfigdevice= <name> addVR interface=VLAN <cust_oam_vlan_id> id=<groupid> track=<trackid> addrType=autoconfig priority=100 preempt=yes</trackid></groupid></cust_oam_vlan_id></name>
6	PMAC: Verify VR	On both aggregations switches, the following command will display the same virtual IPs:
	IPv6 Configuration	VA (I
		XMI: \$ sudo netConfigdevice= <name> getVR interface=VLAN <xmi_vlan_id></xmi_vlan_id></name>
		Customer OAM
		<pre>\$ sudo netConfigdevice=<name> getVR interface=VLAN</name></pre>
		<cust_oam_vlan_id></cust_oam_vlan_id>
7	PMAC: Backup	Perform a backup of aggregation switches using the service name found in <i>procedure 1</i> step
	Switch	5 of [1]. The filename option should specify a unique name for each of the backups:
	Configuration	<pre>\$ sudo netConfigdevice=<name> backupConfiguration service=<service> filename=<device>-postmigrate</device></service></name></pre>

APPENDIX H: MY ORACLE SUPPORT (MOS)

MOS (<u>https://support.oracle.com</u>) is your initial point of contact for all product support and training needs. A representative at Customer Access Support (CAS) can assist you with MOS registration.

Call the CAS main number at **1-800-223-1711** (toll-free in the US), or call the Oracle Support hotline for your local country from the list at <u>https://www.oracle.com/us/support/contact/index.html</u>.

When calling, there are multiple layers of menus selections. Make the selections in the sequence shown below on the Support telephone menu:

- 1) For the first set of menu options, select 2, "New Service Request". You will hear another set of menu options.
- 2) In this set of menu options, select 3, "Hardware, Networking and Solaris Operating System Support". A third set of menu options begins.
- 3) In the third set of options, select 2, "Non-technical issue". Then you will be connected to a live agent who can assist you with MOS registration and provide Support. Identifiers. Simply mention you are a Tekelec Customer new to MOS.