

z/OS Communications Server and NetView for z/OS DVIPA (Dynamic Virtual IP Addressing) Management

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Agenda

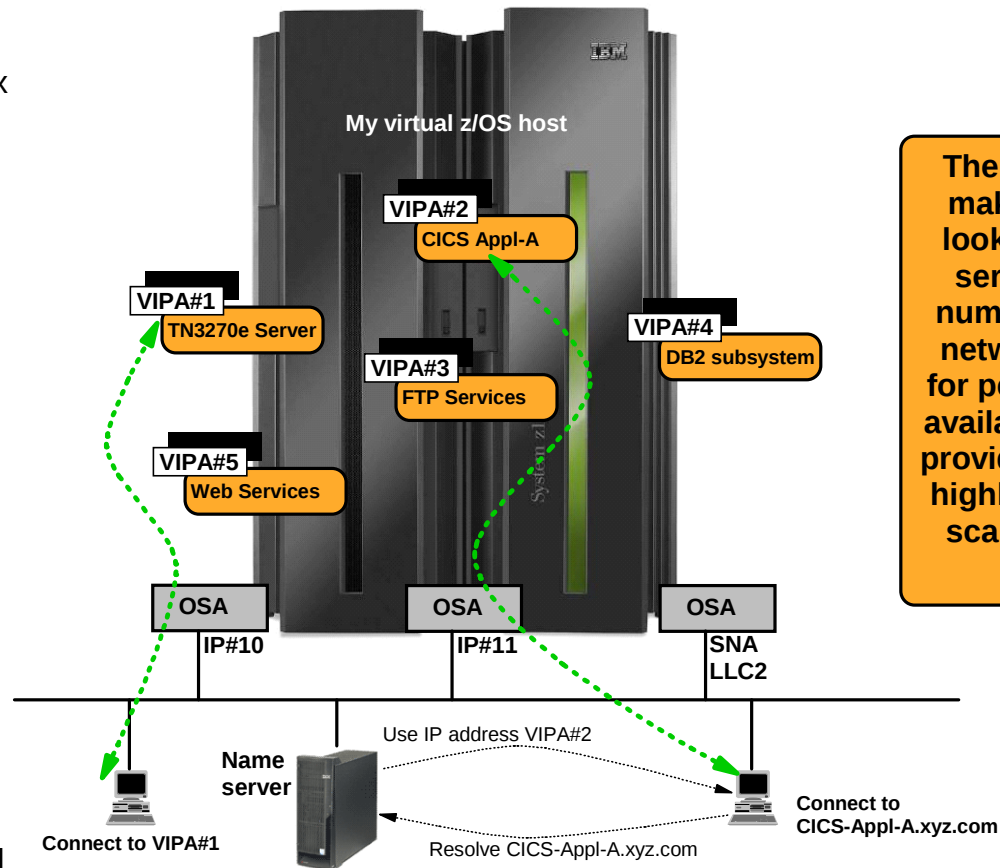
- ❑ **Sysplex Distributor – How is workload distributed? What are the varying distribution methods and factors that comprise the load balancing decision?**
- ❑ **Monitoring workload distribution, detecting problems and anomalies**
- ❑ **Overview of NetView for z/OS DVIPA management/monitoring features**
- ❑ **How can NetView for z/OS help with specific Sysplex Distributor workload balancing problem scenarios**

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The network view of a Parallel Sysplex - a single large server with many network interfaces and many application services

- The promises of the Parallel Sysplex cluster environment are:
 - Application location independence
 - Ability to shift application workload between LPARs
 - Application single system image from the network
 - Application capacity on-demand
 - Component failure does not lead to application failure

- Gaining the benefits, depend on:
 - Carefully designed redundancy of all key hardware and software components in symmetric configurations
 - Supporting functions in z/OS and middleware
 - Cooperation by applications
 - Operations procedures



**SNA and
TCP/IP**

- ✓ **Single-system image (SSI)**
- ✓ **Scalable**
- ✓ **Highly available**
- ✓ **Secure**

A summary of the different types of z/OS VIPA addresses

▪ **Static VIPA**

- Belongs to one TCP/IP stack. Manual configuration changes are needed to move it.
 - No dependencies on Sysplex functions – can be used in non-Sysplex LPARs
 - Required for certain functions such as Enterprise Extender
 - Beneficial for interface resilience, source IP addressing, etc.

▪ **Dynamic VIPA (DVIPA)**

– **Stack-managed (VIPADefine/VIPABackup)**

- Belongs to one TCP/IP stack, but backup policies govern which TCP/IP stack in the Sysplex takes it over if the primary TCP/IP stack leaves the Sysplex
- Individual stack-managed dynamic VIPAs can be moved between primary and backup stacks using MVS operator commands

– **Application-specific also known as bind-activated (VIPARANGE)**

- Belongs to an application. Becomes active on the TCP/IP stack in the Sysplex where the application is started. Moves with the application.

– **Command- or utility activated (VIPARANGE)**

- Belongs to whatever TCP/IP stack in the Sysplex on which a MODDVIPA utility to activate the address has been executed.
- Moves between TCP/IP stacks based on execution of the MODDVIPA utility.

– **Distributed also known as a DRVIPA or sometimes DDVIPA (VIPADefine/VIPABackup + VIPADistribute)**

- Used with Sysplex Distributor as a cluster IP address that represents a cluster of equal server instances in the Sysplex.
- From a routing perspective it belongs to one TCP/IP stack.
- From an application perspective it is distributed among the TCP/IP stacks in the Sysplex where an instance of the server application is executing.

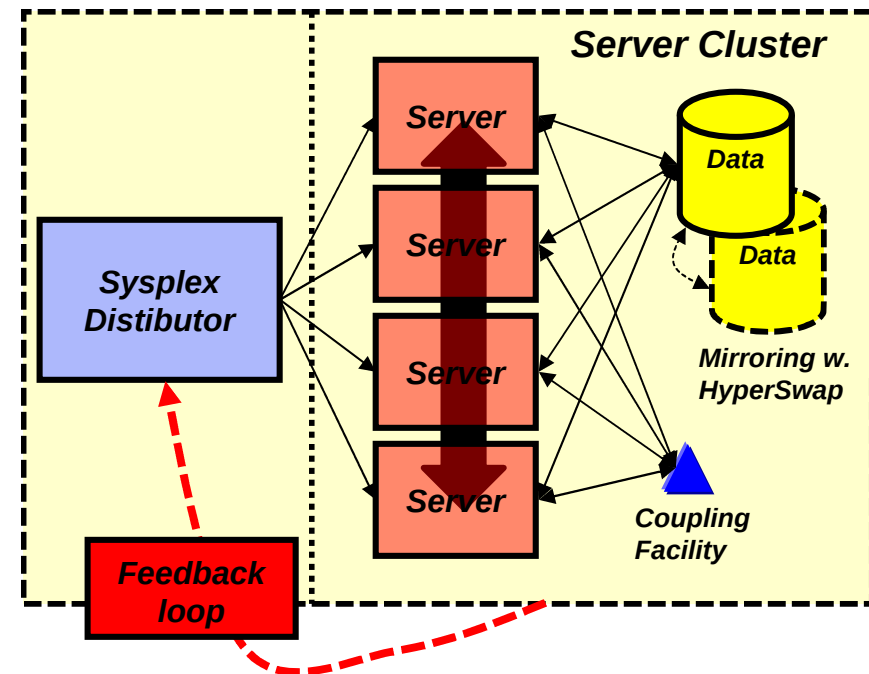
Sysplex Distributor Overview and Workload Balancing Considerations



What are the main objectives of network workload balancing with Sysplex Distributor?

- **Performance**
 - Workload management across a cluster of server instances
 - One server instance on one hardware node may not be sufficient to handle all the workload
- **Availability**
 - As long as one server instance is up-and-running, the “service” is available
 - Individual server instances and associated hardware components may fail without impacting overall availability
- **Capacity management / horizontal growth**
 - Transparently add/remove server instances and/or hardware nodes to/from the pool of servers in the cluster
- **Single System Image**
 - Give users one target hostname to direct requests to
 - Number of and location of server instances is transparent to the user

All server instances must be able to provide the same basic service. In a z/OS Sysplex that means the applications must be Sysplex-enabled and be able to share data across all LPARs in the Sysplex.



In order for the load balancing decision maker to meet those objectives, it must be capable of obtaining feedback dynamically, such as server instance availability, capacity, performance, and overall health.

Sysplex Distributor Distribution Methods

Distribution method	Description	Key attributes
BASEWLM	<i>Uses WLM recommendations that are based on the available and displaceable capacity available on a target z/OS System</i>	<i>Dynamic updates, responds to changes in system wide utilization, also has several sources of additional health information that can be incorporated</i>
SERVERWLM	<i>Uses WLM recommendations that are based on available and displaceable capacity for the target application server, whether the application is meeting service class goals and facilities that allow for the incorporation of application specific health</i>	<i>Dynamic updates, responds to changes in system wide utilization and changes in performance and available capacity for the specific target application, also has several sources of additional health information that can be incorporated. Generally, the preferred distribution method!</i>

Sysplex Distributor Distribution Methods (cont)

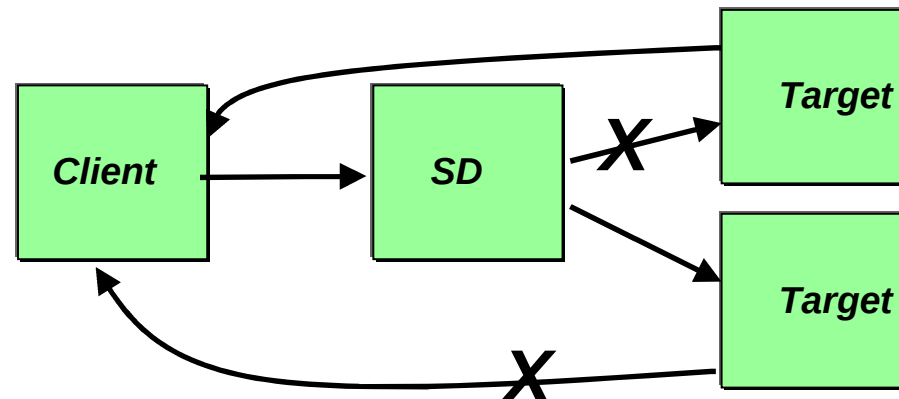
<i>Distribution method</i>	<i>Description</i>	<i>Key attributes</i>
<i>ROUNDROBIN</i>	Static Round Robin Distribution across all eligible targets	Static distribution, awareness of target servers being up or not, limited ability to incorporate other health factors
<i>WEIGHTEDACTIVE</i>	Round Robin distribution based on user specified fixed weights, accounts for active connections already distributed	Largely a static distribution, awareness of target servers/applications being up or not, also takes into consideration real time information on number of active connections on each target, ability to incorporate other health factors

Sysplex Distributor Distribution Methods (cont)

<i>Distribution method</i>	<i>Description</i>	<i>Key attributes</i>
<i>HOTSTANDBY</i>	Targets primary target system as long as the system and application are active, otherwise selects the highest ranked backup target	Real time detection of failures to the primary system/application and switch to backup, limited ability to incorporate other health factors
<i>TARGETCONTROLLED</i>	Can be used to dynamically load balance connections to a cluster of IBM DataPower appliances (standalone appliances in the network or the integrated XI50z DataPower appliances in the zBX). Uses dynamic feedback on CPU utilization obtained from DataPower.	Dynamic load balancing based on DataPower availability and CPU utilization.

Sysplex Distributor built-in awareness of abnormal conditions

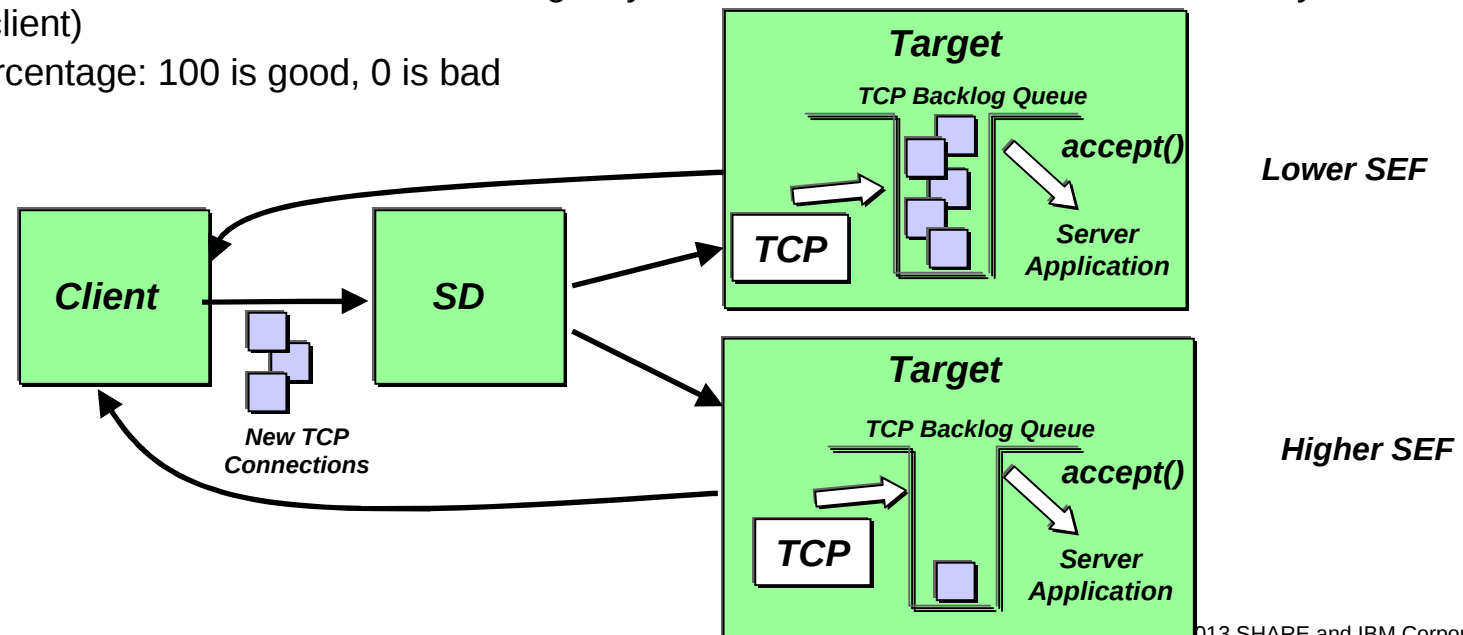
- TSR – Target Server Responsiveness
 - How healthy is the target system and application from an SD perspective? A percentage, 0-100%
 - Comprised of several individual health metrics:
 - TCSR – Target Connectivity Success Rate
 - Are connections being sent to the Target System making it there?
 - A Percentage: 100 is good, 0 is bad



- CER – Connectivity Establishment Rate
 - Is connectivity between the target system and the client ok?
 - By monitoring TCP Connection Establishment state (requires 3 way handshake between client and server) we can detect whether a connectivity issue exists
 - A percentage: 100 is good, 0 is bad
 - Note: CER no longer part of TSR directly but is included in SEF and continues to be calculated and reported separately

Sysplex Distributor built-in awareness of abnormal conditions

- TSR – Target Server Responsiveness (cont)
 - SEF – Server Efficiency Fraction
 - Is the target server application server keeping up with new connections in its backlog queue?
 - > Is the new connection arrival rate higher than the application accept rate? (i.e. is backlog growing over time)
 - > How many connections in the TCP backlog queue? How close to maximum backlog queue depth? Did we have to drop any new connections because the backlog queue max was exceeded?
 - > Is the server application hung? (i.e. not accepting any connections)
 - > Are the number of half-open connections on the backlog queue growing? (Similar to CER – One such scenario is when the target system does not have network connectivity to the client)
 - A Percentage: 100 is good, 0 is bad



Middleware/Application Issues and the “Storm Drain Problem”

- TCP/IP and WLM are not aware of all problems experienced by load balancing targets (middleware/applications) – Examples:
 - The server application needs a resource such as a database, but the resource is unavailable
 - The server application is failing most of the transactions routed to it because of internal processing problems
 - The server application acts as a transaction router for other back-end applications on other system(s), but the path to the back-end application is unavailable
- In each of these scenarios, the server may appear to be completing the transactions quickly (using little CPU capacity) when they are actually being failed
- This is sometimes referred to as the *Storm Drain Problem*
 - The server is favored by WLM since it is using very little CPU capacity
 - As workloads increase, the server is favored more and more over other servers
 - All this work goes "down the drain"

Improving WLM awareness of Application Health - Avoiding "Storm Drain" Issues

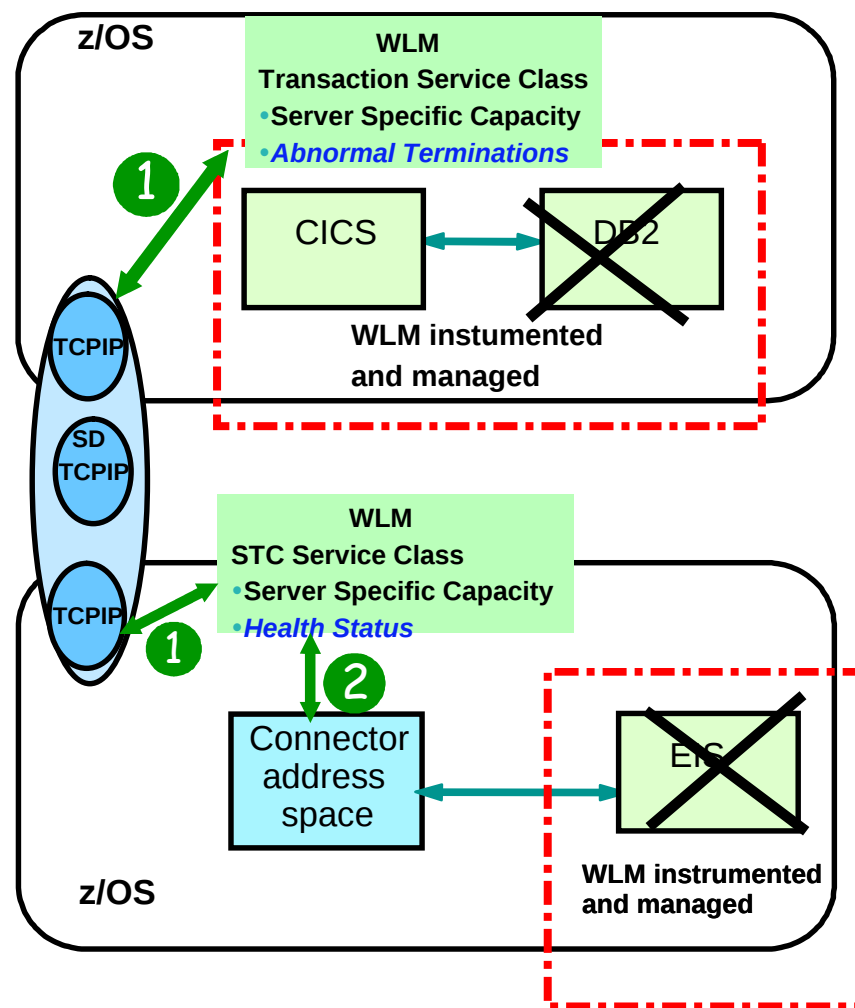
Server Scenarios

1 IWM4SRSC WLM Service

- Used by Sysplex Distributor to obtain WLM recommendations
- Abnormal Termination information: Reported by 1st tier server when transactions can not complete because back end resource managers are not available
 - WLM uses this information to reduce the recommendation for ailing server

2 IWM4HLTH WLM Service

- Allows address spaces which are not instrumented with WLM to set a health status which is also returned by IWM4SRSC
- The ServerWLM recommendations are reduced when the health is <100%
- Exploited by CICS Transaction Gateway, DB2 and LDAP



What impacts the final selection of a target server instance?

Technology	Target LPAR displaceable capacity as seen by WLM	Server instance performance as seen by WLM	Server instance self-perceived health (as reported to WLM)	Server instance TCP/IP perceived health (the TSR value)	QoS perceived network performance (the QoS fraction)
SD ROUNDROBIN	No	No	No	Yes (if TSR=zero)	No
SD WEIGHTEDACTIVE	No	No	Yes	Yes	No
SD BASEWLM	Yes	No	No	Yes	Yes
SD SERVERWLM	Yes	Yes	Yes	Yes	Yes
SD TARGETCONTROLLED	Yes (SD agent)	No	No	No	No
SD HOTSTANDBY	No	No	Yes	Yes	No
PORT SHAREPORT	No	No	No	Yes (Only SEF value)	No
PORT SHAREPORTWLM	No	Yes	Yes	Yes (Only SEF value)	No

Using Netstat VDPT Detail display to monitor Sysplex Distributor

NETSTAT VDPT DETAIL

MVS TCP/IP NETSTAT CS V1R13 TCPIP Name: TCPCS 15:35:26

Dynamic VIPA Distribution Port Table for TCP/IP Stacks:

Dest IPaddr	DPort	DestXCF Addr	Rdy	TotalConn	WLM	TSR	Flg
201.2.10.14	00244	201.3.10.16	001	0002304546	12	080	1
DistMethod: ServerWLM							
TCSR: 100 CER: 095 SEF: 080							
Weight: 58							
Raw CP: 58 zAAP: 00 zIIP: 58							
Proportional CP: 04 zAAP: 00 zIIP: 54							
Abnorm: 0000 Health: 100							
ActConn: 0000000101							
QosPlcAct: *DEFAULT*							
201.2.10.14	00244	201.3.10.17	001	0001543454	10	100	1
DistMethod: ServerWLM							
TCSR: 100 CER: 100 SEF: 100							
Weight: 40							
Raw CP: 40 zAAP: 00 zIIP: 40							
Proportional CP: 06 zAAP: 00 zIIP: 34							
Abnorm: 0000 Health: 100							
ActConn: 0000000030							
QosPlcAct: *DEFAULT*							

W/Q: 01

W/Q: 01

Annotations:

- Target Server Responsiveness (TSR) and subcomponents (applied to WLM weight)**: Points to the TSR value (080) in the first entry.
- ActConn: Active number of connections to this target at this time. Note connections in Timewait or Finwait states also show up here. This is a snapshot, can vary significantly across netstat invocations**: Points to the ActConn value (0000000101) in the first entry.
- WLM Weight after all adjustments**: Points to the WLM value (12) in the first entry.
- TSR, Subsystem Health, Abnormal Connection Rate. Final value divided by 4 to end up with 0-16 value range**: Points to the TSR value (080) in the first entry.
- TotalConn: Total number of connections since DVIPA was activated – ever increasing value**: Points to the TotalConn value (0002304546) in the first entry.
- WLM Information: Raw Weights, Proportional Weights, Abnormal Transaction Rate and Middleware reported health**: Points to the Weight (58) and Abnorm (0000) values in the first entry.

Monitoring Sysplex Distributor – Sample Scenarios

- While Sysplex Distributor provides many autonomic functions that optimize load balancing based on the current Sysplex conditions there are scenarios where monitoring changes in workload distribution can help identify problems so that corrective actions can be taken
 - TCP/IP provided facilities like the Netstat VDPT Detail report can be very useful for gaining insight into the current state of the system and Sysplex Distributor
 - Provides a lot of detail if you know what you are looking for
 - A snapshot of the current state of the system (no historical perspective is provided)
 - And it depends on the user issuing the command to detect problems (no automated notification of problem conditions)
 - Next we will examine NetView for z/OS and its advanced management functions for DVIPAs and how it can improve your monitoring operations for DVIPAs
 - With a focus on its support for Sysplex Distributor and how it can help reduce problem resolution time and make monitoring the environment more efficient

NetView for z/OS DVIPA Management Overview



DVIPA Management Capabilities

- NetView provides a lot of DVIPA information for use in managing and diagnosing problems in your sysplex:
 - Sampled, real-time, and historical monitoring capabilities
 - DVIPA events
 - Distributed DVIPA statistics
- DVIPA information can be viewed at the:
 - Local NetView domain
 - Sysplex master NetView domain
 - Displays DVIPA information available from all NetView domains in the sysplex
 - NetView domains must all participate in the same NetView XCF group
 - DVIPA connection information is not forwarded to the sysplex master NetView for performance reasons
- DVIPA information is displayed in the:
 - Tivoli Enterprise Portal (TEP) using the NetView for z/OS Enterprise Management Agent
 - NetView 3270 console

DVIPA Monitoring

- NetView provides the following DVIPA information:
 - DVIPA Definition and Status, including views for:
 - Application-instance DVIPAs
 - Stack-defined DVIPAs
 - Sysplex Distributors
 - Distributed DVIPA (DDVIPA) Targets
 - DDVIPA Server Health, including a view for:
 - DDVIPA Unhealthy Servers
 - DVIPA Connections
 - VIPA Routing
 - DDVIPA Connection Routing
- TEP displays sampled and historical data, which can be updated using DVIPA events
 - *Historical data collection must be enabled*
 - Long term history requires Tivoli Data Warehouse.
- NetView 3270 commands and samples display real-time DVIPA information

DVIPA Events

- DVIPA Events can be used to provide a better “real time” view of DVIPA information. NetView has automation for three types of DVIPA Events:
 - Real-time DVIPA changes
 - DVIPA status change and DVIPA removed
 - DVIPA target added and removed
 - DVIPA target server started and ended
 - *Requires z/OS V1R12 Communications Server*
 - *Equivalent data can be retrieved from DVIPA SNMP traps*
 - DVIPA Configuration Changes
 - *Requires z/OS V1R11 Communications Server*
 - Sysplex Autonomics messages
- When a DVIPA event is received:
 - NetView will bundle the events using configurable delays
 - Notify the master that this system needs rediscovering
 - The master NetView also has a delay to bundle the event messages
 - Send rediscovery commands to all systems in the sysplex impacted by the event

Distributed DVIPA Statistics

- Provides the capability to collect workload distribution for each distributed DVIPA target
 - Used for problem determination
 - Used for historical data
- Collects and calculates data after each DDVIPA sampled data collection
- Starts during NetView initialization or using DVIPALOG command
- Writes data to a sequential data set
 - Primary and secondary data sets allocated
 - Messages indicate data set switching
- Sample CNMSDVST shows data in both data sets on NetView 3270 console
- Forwards data to master NetView, if configured to do so
- Reports (not provided by NetView) can be written against the data

DDVIPA Statistics Information Provided

- STCK
- Date
- Time
- System
- TCP Job Name
- DDVIPA
- DDVIPA Port
- Target System
- Target TCP Job Name
- Distribution Method
- Total Connections
- Delta Connections
- WLM Weight
- SD Percentage TCP Connections
- Percentage WLM Weight

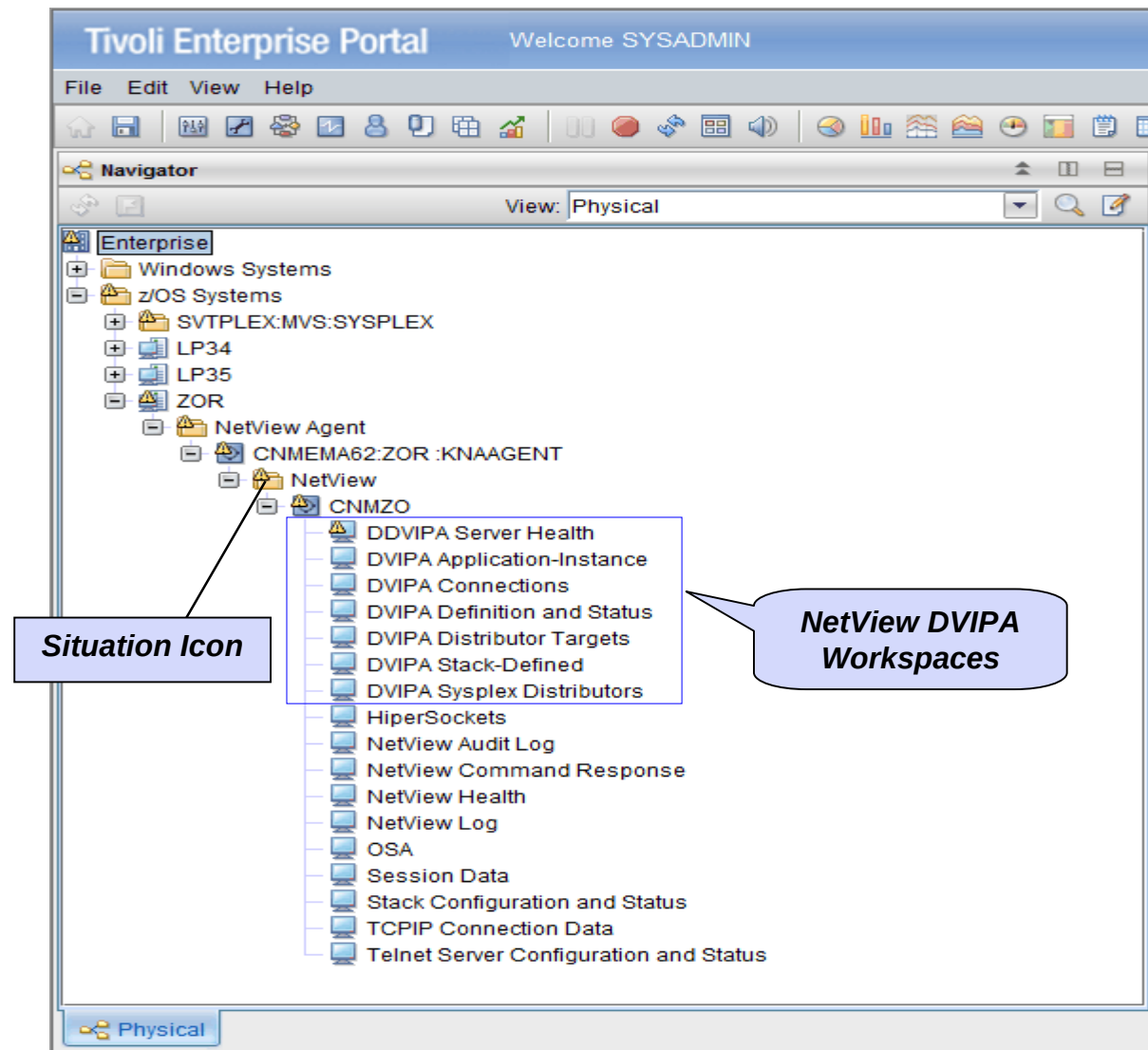
DVIPA 3270 Commands and Samples

- DVIPSTAT (CNMSDVIP)
 - Displays DVIPA definition and status information
- DVIPPLEX (CNMSPLEX)
 - Displays Distributed DVIPA (DDVIPA) information
- DVIPTARG (CNMSTARG)
 - Displays Distributed DVIPA targets information
- DVIPHLTH (CNMSDVPH)
 - Displays DDVIPA server health information
- DVIPCONN (CNMSDVPC)
 - Displays DVIPA connections
- VIPAROUT (CNMSVPRT)
 - Displays VIPA route information
- DVIPDDCR (CNMSDDCR)
 - Displays distributed DVIPA connection routing information

NetView for z/OS DVIPA Workspaces



TEP Navigation Tree



Stack Configuration and Status

Stack Configuration and Status
Page Safety Tools

Tivoli Enterprise Portal Welcome SYSADMIN Log out IBM

File Edit View Help

View: Physical

- NetView
 - CNMZO
 - DDVIPA Server Health
 - DVIPA Application-Instance
 - DVIPA Connections
 - DVIPA Definition and Status
 - DVIPA Distributor Targets
 - DVIPA Stack-Defined
 - DVIPA Sysplex Distributors
 - HiperSockets
 - NetView Audit Log
 - NetView Command Response
 - NetView Health
 - NetView Log
 - OSA
 - Session Data
 - Stack Configuration and Status**
 - TCP/IP Connection Data
 - Telnet Server Configuration and Status

Physical

Stack by Status

Take Action

Take Action

Action
Name: <Select Action>
Command:
Arguments...

Destination Systems

Run

Stack Configuration and Status Summary

	Update Time	TCP/IP Job Name	TCP/IP Host Name	Status	Sysplex Name	XCF Group Name	VTAM XCF Group Name	z/OS Image Name	Primary Interface	IP Address	IPv6 Enabled	IPSec Enabled	AT-TLS Enabled	Source VIPA Enabled	TCP Stack Source VIPA Enabled	Segmentation Offload Enabled	z/OS IP Security Enabled	Sysplex WLM Polling Interval	z/OS Release Level	IPSecV6 Enabled	Source VIPAV6 Enabled	TCP Stack Source VIPAV6 Enabled
	08/13/13 11:28:18	TCPSVT	ZORRO	ACTIVE	PLEX1	EZBTCPCS	ISTXCF	ZORRO	LZOVIPA1	197.11.133.1	Yes	Yes	Yes	Yes	No	Yes	No	15	V2R1	Yes	Yes	No

Hub Time: Tue, 08/13/2013 11:30 AM
Server Available
Stack Configuration and Status - nc058026.tivlab.raleigh.ibm.com - SYSADMIN

Done
Internet | Protected Mode: Off
120%

DVIPA Stack Summary Link

The screenshot shows the Tivoli Enterprise Portal interface. The 'Stack Configuration and Status' window is open, displaying a tree view on the left with 'Stack Configuration and Status' selected. The main area shows a 3D bar chart titled 'Stack by Status' with a single yellow bar representing the 'ACTIVE' status. The 'Take Action' panel on the right is empty. Below the chart is a table titled 'Stack Configuration and Status Summary'.

Update Time	TCP/IP Job Name	TCP/IP Host Name	Status	Sysplex Name	XCF Group Name	VTAM XCF Group Name	zOS Image Name	Primary Interface	IP Address	IPv6 Enabled	IPSec Enabled	AT-TLS Enabled	Source VIPA Enabled	TCP Stack Source VIPA Enabled	Segmentation Offload Enabled	zLIP IP Security Enabled	Sysplex WLM Polling Interval	zOS Release Level	IPSecv6 Enabled	Source VIPAV6 Enabled	TCP Stack Source VIPAV6 Enabled
08/08/2013 11:34:00	00000000	00000000	ACTIVE	PLEX1	EZBTCPCS	ISTXCF	ZORRO	LZOVIPA1	197.11.133.1	Yes	Yes	Yes	Yes	No	Yes	No	15	V2R1	Yes	Yes	No

A callout box points to the 'Link' icon in the first row of the table, with the text: **Right-click on Link icon. Select DVIPA Stack Summary.**

The bottom status bar shows: Hub Time: Tue, 08/13/2013 11:34 AM; Server Available; Stack Configuration and Status - nc058026.tivoli.raleigh.ibm.com - SYSADMIN.

DVIPA Stack Summary Workspace

Tivoli Enterprise Portal Welcome SYSADMIN Log out IBM

File Edit View Help

Navigators

- NetView
 - CNMZ0
 - DDVIPA Server Health
 - DVIPA Application Instance
 - DVIPA Connections
 - DVIPA Definition and Status
 - DVIPA Distributor Targets
 - DVIPA Stack-Defined
 - DVIPA Sysplex Distributors
 - HiperSockets
 - NetView Audit Log
 - NetView Command Response
 - NetView Health
 - NetView Log
 - OSA
 - Session Data
 - Stack Configuration and Status**
 - TCPIP Connection Data
 - Telnet Server Configuration and Status

DVIPA Defined for TCPIP Job Name TPCSVT and z/OS Image Name ZORRO

	Update Time	DVIPA	Time Activated	Origin	Status	Interface Name
	08/13/13 11:32:18	197.11.203.1		backup	backup	VIPLC50BCB01
	08/13/13 11:32:18	197.11.203.2		backup	backup	VIPLC50BCB02
	08/13/13 11:32:18	197.11.203.3		backup	backup	VIPLC50BCB03
	08/13/13 11:32:18	197.11.203.4		backup	backup	VIPLC50BCB04
	08/13/13 11:32:18	197.11.203.5		backup	backup	VIPLC50BCB05
	08/13/13 11:32:18	197.11.203.6		backup	backup	VIPLC50BCB06
	08/13/13 11:32:18	197.11.203.7		backup	backup	VIPLC50BCB07
	08/13/13 11:32:18	197.11.203.8		backup	backup	VIPLC50BCB08
	08/13/13 11:32:18	197.11.203.9		backup	backup	VIPLC50BCB09
	08/13/13 11:32:18	197.11.203.10		backup	backup	VIPLC50BCB0A
	08/13/13 11:32:18	197.11.203.11		backup	backup	VIPLC50BCB0B
	08/13/13 11:32:18	197.11.203.12		backup	backup	VIPLC50BCB0C
	08/13/13 11:32:18	197.11.203.13		backup	backup	VIPLC50BCB0D
	08/13/13 11:32:18	197.11.203.14		backup	backup	VIPLC50BCB0E
	08/13/13 11:32:18	197.11.203.15		backup	backup	VIPLC50BCB0F
	08/13/13 11:32:18	197.11.203.16		backup	backup	VIPLC50BCB10
	08/13/13 11:32:18	197.11.203.17		backup	backup	VIPLC50BCB11
	08/13/13 11:32:18	197.11.203.18		backup	backup	VIPLC50BCB12
	08/13/13 11:32:18	197.11.203.19		backup	backup	VIPLC50BCB13
	08/13/13 11:32:18	197.11.203.20		backup	backup	VIPLC50BCB14

Sysplex Distributors Defined for TCPIP Job Name TPCSVT and z/OS Image Name ZORRO

	Update Time	DVIPA	DVIPA Port	Status	Distribution Method	Configured Target Stacks	Active Target Stacks	Auto Switch Back	Health Switch
	08/13/13 11:32:20	197.11.202.20	623	active	hotStandby	2	2	Yes	No

Local Distributed Targets Defined for TCPIP Job Name TPCSVT and z/OS Image Name ZORRO

	Update Time	DVIPA	DVIPA Port	Dynamic XCF IP Address	Listening Servers	Total Connections	Active Connections	Hot Standby Server Type	Hot Standby Server Status	Hot Standby Rank	Distribution Port Function
	08/13/13 11:30:35	197.11.201.1	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X80
	08/13/13 11:30:35	197.11.201.2	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X10
	08/13/13 11:30:35	197.11.201.2	59446	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
	08/13/13 11:30:35	197.11.201.2	59447	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
	08/13/13 11:30:35	197.11.201.3	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X40
	08/13/13 11:30:35	197.11.201.4	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X04
	08/13/13 11:30:35	197.11.201.6	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X80
	08/13/13 11:30:35	197.11.201.2	59546	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
	08/13/13 11:30:35	197.11.201.2	59547	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
	08/13/13 11:30:35	197.11.201.1	50623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X80

Hub Time: Tue, 08/13/2013 11:35 AM Server Available DVIPA Stack Summary - nc058026.tivlab.raleigh.ibm.com - SYSADMIN

Distributed DVIPA Targets Link

DVIPA Stack Summary

Tivoli Enterprise Portal Welcome SYSADMIN

File Edit View Help

Navigator View: Physical

- NetView
 - CNMZO
 - DVIPA Server Health
 - DVIPA Application-Instance
 - DVIPA Connections
 - DVIPA Definition and Status
 - DVIPA Distributor Targets
 - DVIPA Stack-Defined
 - DVIPA Sysplex Distributors
 - HiperSockets
 - NetView Audit Log
 - NetView Command Response
 - NetView Health
 - NetView Log
 - OSA
 - Session Data
 - Stack Configuration and Status
 - TCPIP Connection Data
 - Telnet Server Configuration and Status

Physical

DVIPA Defined for TCPIP Job Name TCPSVT and z/OS Image Name ZORRO

Update Time	DVIPA	Time Activated	Origin	Status	Interface Name
08/13/13 11:32:18	197.11.203.1		backup	backup	VIPLC50BCB01
08/13/13 11:32:18	197.11.203.2		backup	backup	VIPLC50BCB02
08/13/13 11:32:18	197.11.203.3		backup	backup	VIPLC50BCB03
08/13/13 11:32:18	197.11.203.4		backup	backup	VIPLC50BCB04
08/13/13 11:32:18	197.11.203.5		backup	backup	VIPLC50BCB05
08/13/13 11:32:18	197.11.203.6		backup	backup	VIPLC50BCB06
08/13/13 11:32:18	197.11.203.7		backup	backup	VIPLC50BCB07
08/13/13 11:32:18	197.11.203.8		backup	backup	VIPLC50BCB08
08/13/13 11:32:18	197.11.203.9		backup	backup	VIPLC50BCB09
08/13/13 11:32:18	197.11.203.10		backup	backup	VIPLC50BCB0A
08/13/13 11:32:18	197.11.203.11		backup	backup	VIPLC50BCB0B
08/13/13 11:32:18	197.11.203.12		backup	backup	VIPLC50BCB0C
08/13/13 11:32:18	197.11.203.13		backup	backup	VIPLC50BCB0D
08/13/13 11:32:18	197.11.203.14		backup	backup	VIPLC50BCB0E
08/13/13 11:32:18	197.11.203.15		backup	backup	VIPLC50BCB0F
08/13/13 11:32:18	197.11.203.16		backup	backup	VIPLC50BCB10
08/13/13 11:32:18	197.11.203.17		backup	backup	VIPLC50BCB11
08/13/13 11:32:18	197.11.203.18		backup	backup	VIPLC50BCB12
08/13/13 11:32:18	197.11.203.19		backup	backup	VIPLC50BCB13
08/13/13 11:32:18	197.11.203.20		backup	backup	VIPLC50BCB14

Sysplex Distributors Defined for TCPIP Job Name TCPSVT and z/OS Image Name ZORRO

Update Time	DVIPA	DVIPA Port	Status	Distribution Method	Configured Target Stacks	Active Target Stacks	Auto Switch Back	Health Switch
08/13/13 11:37:05	197.11.202.20	623	active	hotStandby	2	2	Yes	No

Local Distributed Targets Defined for TCPIP Job Name TCPSVT and z/OS Image Name ZORRO

Update Time	DVIPA	DVIPA Port	Dynamic XCF IP Address	Listening Servers	Total Connections	Active Connections	Hot Standby Server Type	Hot Standby Server Status	Hot Standby Rank	Distribution Port Function
08/13/13 11:32:18	197.11.203.1	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X80
08/13/13 11:32:18	197.11.203.2	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X10
08/13/13 11:32:18	197.11.203.3	623	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
08/13/13 11:32:18	197.11.203.4	623	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
08/13/13 11:32:18	197.11.203.5	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X40
08/13/13 11:32:18	197.11.203.6	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X04
08/13/13 11:32:18	197.11.203.7	623	199.11.80.133	1	0	0	N/A	N/A	N/A	0X80
08/13/13 11:32:18	197.11.203.8	623	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
08/13/13 11:32:18	197.11.203.9	623	199.11.80.133	0	0	0	N/A	N/A	N/A	0X10
08/13/13 11:32:18	197.11.203.10	623	199.11.80.133	0	0	0	N/A	N/A	N/A	0X80

Right-click on Link icon. Select Distributed DVIPA Targets.

Hub Time: Tue, 08/13/2013 11:37 AM

Server Available

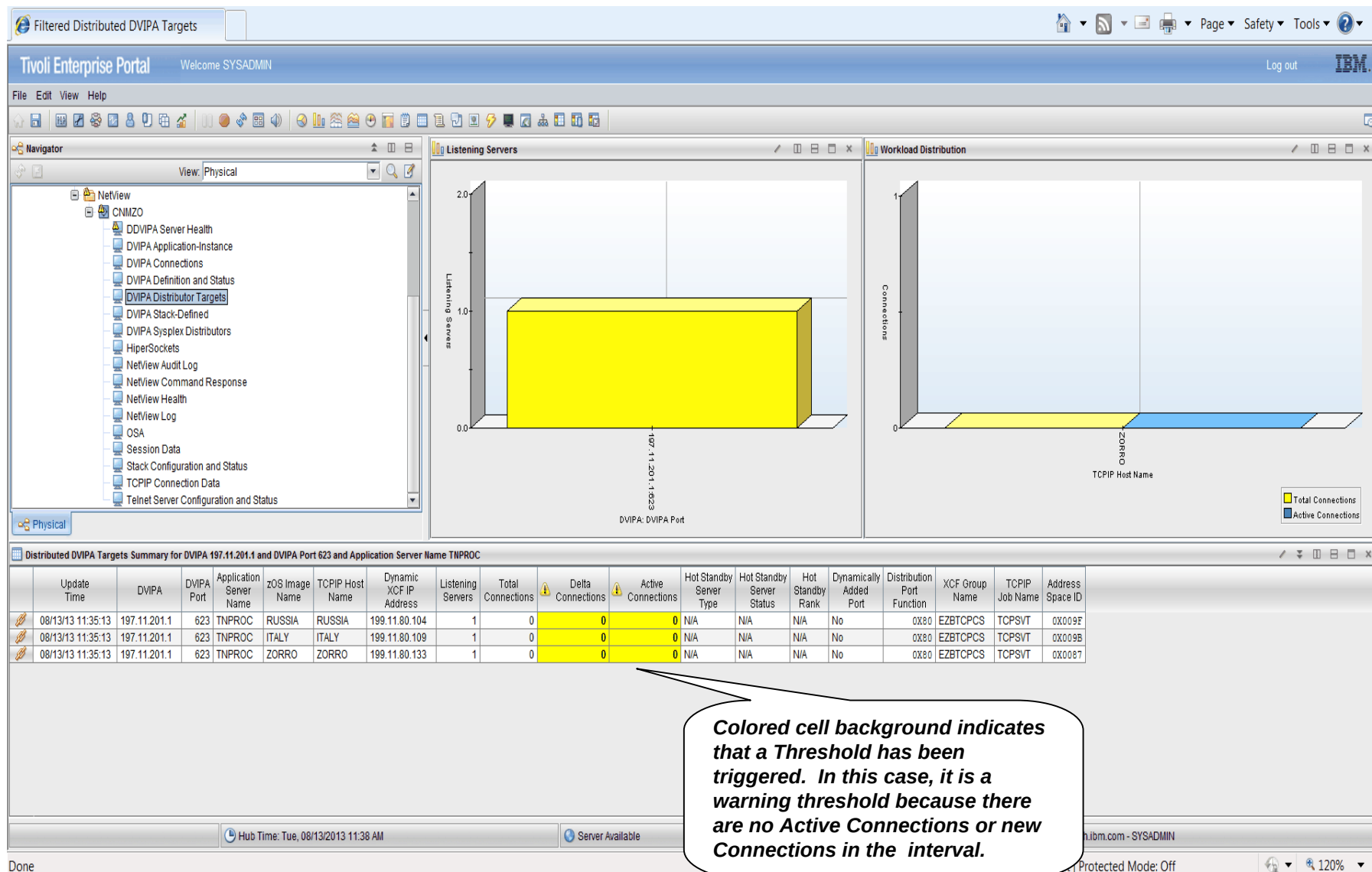
DVIPA Stack Summary - nc058026.tivlab.raleigh.ibm.com - SYSADMIN

Done

Internet | Protected Mode: Off

120%

Filtered Distributed DVIPA Targets Workspace



Distributed DVIPA Targets Workspace (not filtered)

Distributed DVIPA Targets

Welcome SYSADMIN

File Edit View Help

Navigator

View: Physical

- NetView
 - CNMZO
 - DDVIPA Server Health
 - DVIPA Application-Instance
 - DVIPA Connections
 - DVIPA Definition and Status
 - DVIPA Distributor Targets**
 - DVIPA Stack-Defined
 - DVIPA Sysplex Distributors
 - HiperSockets
 - NetView Audit Log
 - NetView Command Response
 - NetView Health
 - NetView Log
 - OSA
 - Session Data
 - Stack Configuration and Status
 - TCP/IP Connection Data
 - Telnet Server Configuration and Status

Listening Servers

Page: 1 of 19

Workload Distribution

Distributed DVIPA Targets Summary

Page: 1 of 100

	Update Time	DVIPA	DVIPA Port	Application Server Name	zOS Image Name	TCP/IP Host Name	Dynamic XCF IP Address	Listening Servers	Total Connections	Delta Connections	Active Connections	Hot Standby Server Type	Hot Standby Server Status	Hot Standby Rank	Dynamically Added Port	Distribution Port Function	XCF Group Name	TCP/IP Job Name	Address
	08/13/13 10:24:17	197.11.201.1	623	TNPROC	RUSSIA	RUSSIA	199.11.80.104	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	TNPROC2	RUSSIA	STACKS	199.11.82.104	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	UNKNOWN	SPAIN	UNKNOWN	199.11.80.110	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	TNPROC1	RUSSIA	STACKS	199.11.81.104	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	TNPROC	ITALY	ITALY	199.11.80.109	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	UNKNOWN	BOTSWANA	UNKNOWN	199.11.80.106	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	UNKNOWN	FRANCE	UNKNOWN	199.11.80.108	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	TNPROC	ZORRO	ZORRO	199.11.80.133	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	UNKNOWN	GERMANY	UNKNOWN	199.11.80.105	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		
	08/13/13 10:24:17	197.11.201.1	623	TNPROC2	ITALY	STACKS	199.11.82.109	1	0	0	0	N/A	N/A	N/A	No	0x80	EZ		

Hub Time: Tue, 08/13/2013 10:26 AM

Server Available

Distributed DVIPA Targets - nc058026.tlvab.raleigh.ibm.com - SYSADMIN

Internet | Protected Mode: Off

120%

Using NetView for z/OS DVIPA Management functions for specific Sysplex Distributor workload balancing scenarios



Monitoring Sysplex Distributor – Sample Scenarios

- 1. Help desk is receiving calls indicating performance issues using an application that is distributed via Sysplex Distributor. You want to understand how TCP connections have been distributed for given Distributed DVIPA over the past 30 minutes.**
2. Sysplex Distributor seems to be favoring one z/OS System significantly more than others for new TCP connections? Why is that?
3. Sysplex Distributor Health metrics are great, they help detect problems and adjust load balancing to avoid systems/applications that have issues. But how do I know that this is happening so I can take corrective actions?

Scenario 1: Application Performance Issues

- Distributed DVIPA Statistics will show you how your DDVIPA connections have been distributed for the application with performance issues for DDVIPA 197.11.211.1 on port 52002.
- Scenario information
 - Your DDVIPA sampling interval is 5 minutes (DVIPA.DVTAD tower)
 - DDVIPA Statistics is enabled and started across all systems in your sysplex
 - If not started, start it dynamically with the DVIPALOG command and filters, as desired
 - Once the next sampling interval passes, issue NetView sample command:
CNMSDVST

or

wait for 30 minutes and issue:

CNMSDVST DVIPA=197.11.211.1 PORT=52002 and scroll through the output.

Scenario 1: CNMSDVST output

Session B - [24 x 80]

File Edit View Communication Actions Window Help

Host: csn3270.rtp.raleigh.il Port: 23 LU Name: Disconnect

CNMKIND OUTPUT FROM **CNMSDVST**

BNH867I NUMBER OF DISTRIBUTED DVIPA STATISTICAL RECORDS: 19815

LINE 379 OF 19817

#	Date	Time	LocalSus	LocalStack	DDVIPA	Port	TargSus	TargStack	DistribMethod	TotalConns	DeltaConns	WLMweight	SD%	WLM%
377	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	SPAIN	TCPSVT	BaseWLM	1786	1746	4	7	7
378	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	RUSSIA	TCPSVT2	BaseWLM	2192	2180	5	8	8
379	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	RUSSIA	TCPSVT	BaseWLM	2267	2227	5	8	8
380	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	ITALY	TCPSVT	BaseWLM	510	490	1	2	2
381	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	RUSSIA	TCPSVT1	BaseWLM	2239	2230	5	8	8
382	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	BOTSWANA	TCPSVT	BaseWLM	918	899	2	3	3
383	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	FRANCE	TCPSVT	BaseWLM	3040	2986	7	11	11
384	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	ZORRO	TCPSVT	BaseWLM	3573	3501	8	13	13
385	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	ITALY	TCPSVT2	BaseWLM	509	491	1	2	2
386	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	BOTSWANA	TCPSVT1	BaseWLM	867	849	2	3	3
387	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	FRANCE	TCPSVT1	BaseWLM	2848	2836	7	11	11
388	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.1	52002	GERMANY	TCPSVT	BaseWLM	6335	6209	14	23	23
389	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	SPAIN	TCPSVT	BaseWLM	0	0	13	0	68
390	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	RUSSIA	TCPSVT2	BaseWLM	0	0	0	0	0
391	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	RUSSIA	TCPSVT	BaseWLM	0	0	0	0	0
392	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	ITALY	TCPSVT	BaseWLM	0	0	2	0	11
393	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	RUSSIA	TCPSVT1	BaseWLM	0	0	0	0	0
394	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	BOTSWANA	TCPSVT	BaseWLM	0	0	0	0	0
395	08/11/13	14:59:44	ITALY	TCPSVT	197.11.211.2	623	FRANCE	TCPSVT	BaseWLM	0	0	1	0	5

TO SEE YOUR KEY SETTINGS, ENTER 'DISPFK'

CMD==>

24/009

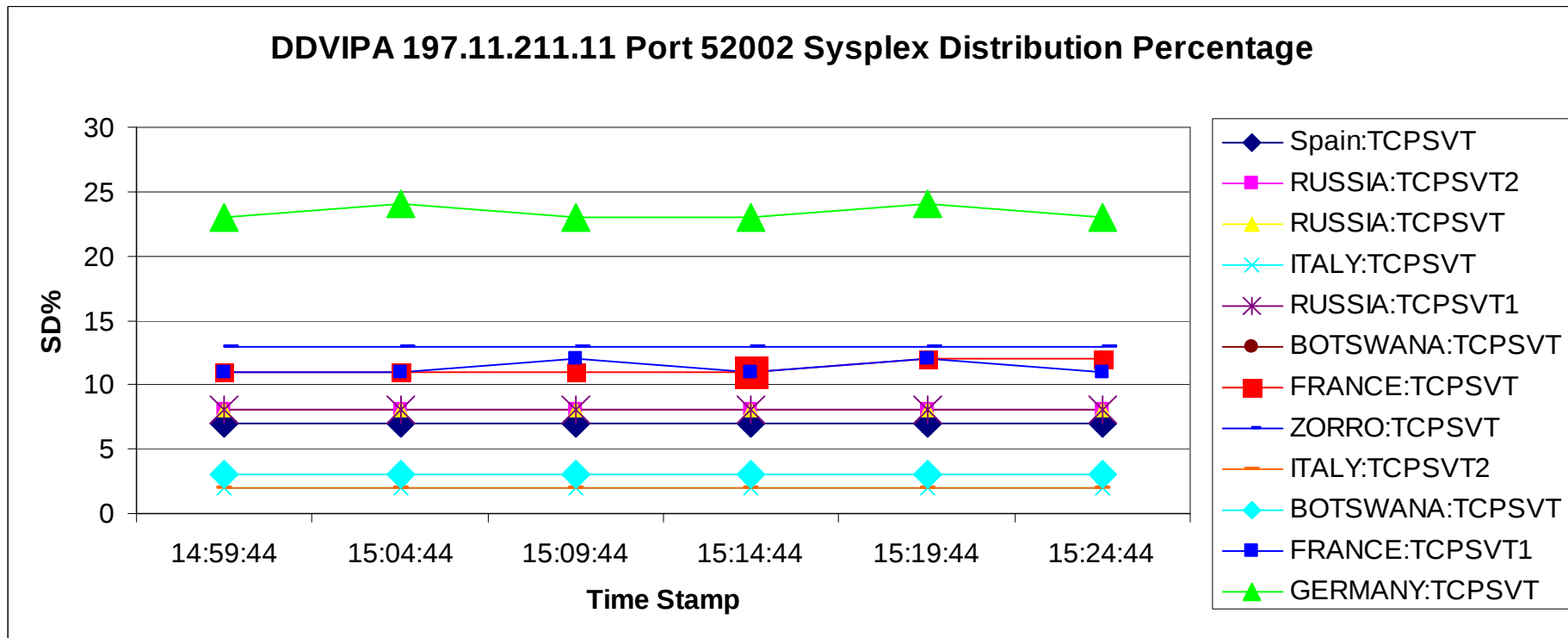
Connected to remote server/host csn3270.rtp.raleigh.ibm.com using lu/pool Z40LU105

Scenario 1: DDVIPA Sysplex Distribution Percentage

Using the data from DDVIPA Statistics, you can track DDVIPA connection distribution. The graph below maps the Sysplex Distributor Connection Information provided by DDVIPA Statistics over 30 minutes.

- *NetView for z/OS does not provide this function.*

For our scenario, the connections are being distributed consistently across all target stacks. However, there is a wide disparity in the number of connections per stack.



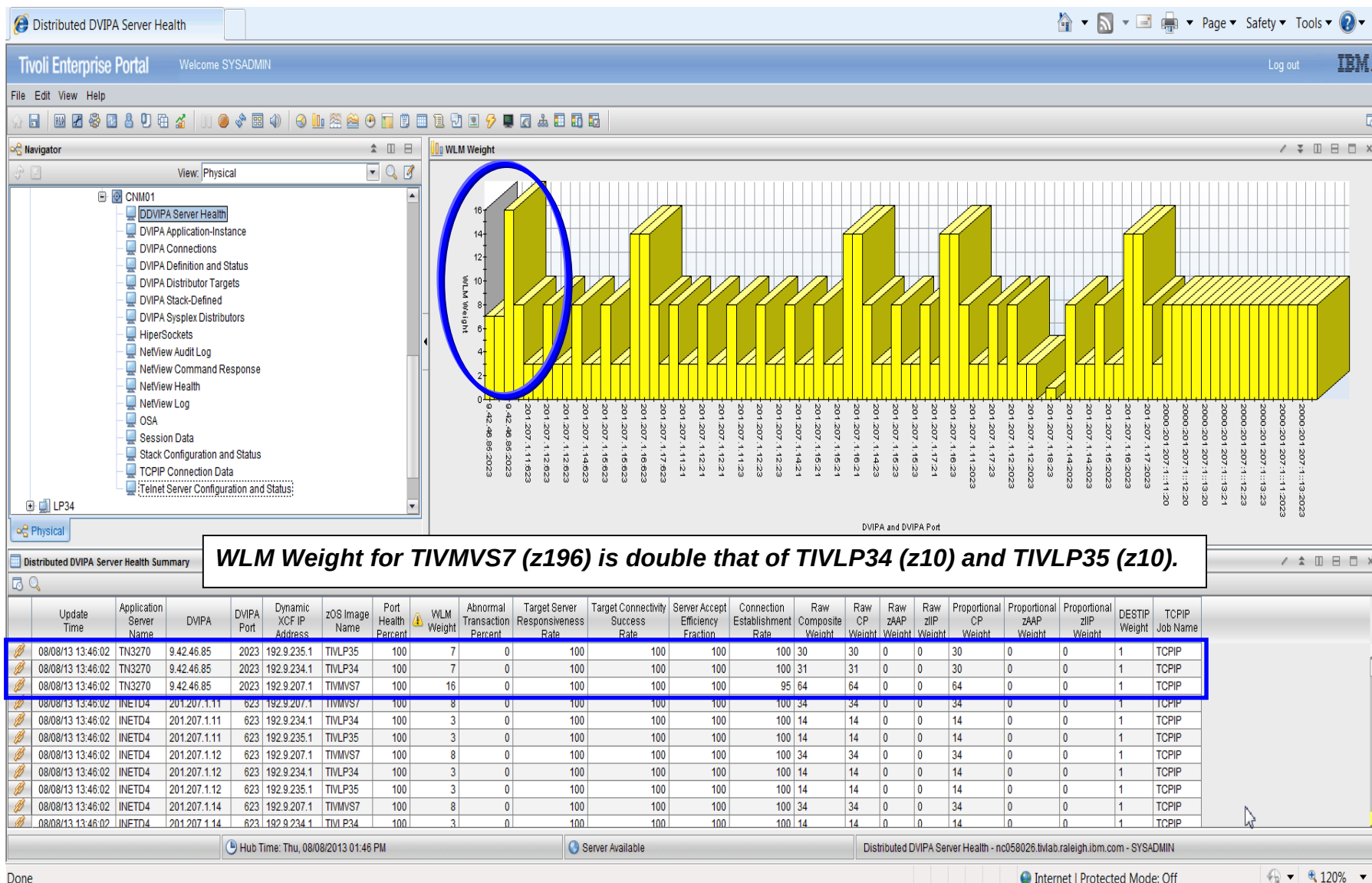
Monitoring Sysplex Distributor – Sample Scenarios

1. Help desk is receiving calls indicating performance issues using an application that is distributed via Sysplex Distributor. You want to understand how TCP connections have been distributed for given Distributed DVIPA over the past 30 minutes.
2. ***Sysplex Distributor seems to be favoring one z/OS System significantly more than others for new TCP connections? Why is that?***
3. Sysplex Distributor Health metrics are great, they help detect problems and adjust load balancing to avoid systems/applications that have issues. But how do I know that this is happening so I can take corrective actions?

Scenario 2: Sysplex Distributor Favoring a System

- The NetView DDVIPA Server Health workspace displays the WLM weight for DDVIPA targets. WLM weight is a key metric for DDVIPA connection distribution.
- Scenario information:
 - DVIPA 9.42.46.85 on port 2023

Scenario 2: WLM Weight and DDVIPA Server Health



Monitoring Sysplex Distributor – Sample Scenarios

1. Help desk is receiving calls indicating performance issues using an application that is distributed via Sysplex Distributor. You want to understand how TCP connections have been distributed for given Distributed DVIPA over the past 30 minutes.
2. Sysplex Distributor seems to be favoring one z/OS System significantly more than others for new TCP connections? Why is that?
3. ***Sysplex Distributor Health metrics are great, they help detect problems and adjust load balancing to avoid systems/applications that have issues. But how do I know that this is happening so I can take corrective actions?***

Scenario 3: Sysplex Distributor Health Notifications

- NetView provides situations with the NetView Agent.
 - Disabled by default
 - “Shipped” situations can be customized
 - New situations can be created
- Scenario information:
 - Operator has 3 open situations on the TEP for Distributed DVIPAs for domain CNMZO related to DDVIPA Server Health
 - Server Accept Efficiency Fraction (SEF) < 70%
 - Created for this scenario
 - Target Server Responsiveness Rate (TSR) < 80%
 - WLM Weight = 0
 - Looking at the Navigator Tree, LPAR ZOR, shows the situation icon, so we’ll start there.
 - We also have a DDVIPA Unhealthy Servers workspace
 - Let’s look at that

Scenario 3: Enterprise Status View

Enterprise Status

Tivoli Enterprise Portal Welcome SYSADMIN Log out

File Edit View Help

Navigator View: Physical

- Enterprise
 - Windows Systems
 - z/OS Systems
 - SVTPLEX:MVS:SYSPLEX
 - LP34
 - LP35
 - ZOR

LPAR ZOR has a situation icon

Situation Event Console (Active) Total Events: 4 Item Filter: Enterprise

Severity	Status	Owner	Name	Display Item	Source	Impact	Global Timestamp	Age	Local Timestamp
Warning	Open		NAS_DVIPA_Target_Serv_Resp_Rate	CNMZO	DDVIPA Server Health	08/08/13 09:26:18	5 Minutes	08/08/13 09:26:18	
Warning	Open		NAS_DVIPA_WLM_Weight	CNMZO	DDVIPA Server Health	08/08/13 09:26:18	5 Minutes	08/08/13 09:26:18	
Warning	Open		NAS_DVIPA_SrvAccept_Efncy_Frac	CNMZO	DDVIPA Server Health	08/08/13 09:26:18	5 Minutes	08/08/13 09:26:18	
Warning	Open		KM5_No_Sysplex_DASD_Filter_Warn	SVTPLEX:MVS:SYSPLEX	Shared DASD Groups Data For Sysplex	08/07/13 15:09:39	18 Hours, 22 Minutes	08/02/13 18:26:40	

Open Events. If event resolves itself, it disappears from this view

Workspace Name

Open Situation Counts - Last 24 Hours

Open Situations over last 24 hours.

My Acknowledged Events

Severity	Status	Owner	Name	Display Item	Source	Impact	Opened	Local Timestamp	Type	UUID	Node	Reference ID
Open			NAS_DVIPA_Target_Serv_Resp_Rate	CNMZO			08/08/13 09:26:18	08/08/13 09:26:18	Sampled		HUB_NC058026	NAS_DVIPA_Target_Serv_Resp_Rate
Open			NAS_DVIPA_WLM_Weight	CNMZO			08/08/13 09:26:18	08/08/13 09:26:18	Sampled		HUB_NC058026	NAS_DVIPA_WLM_Weight
Open			NAS_DVIPA_SrvAccept_Efncy_Frac	CNMZO			08/08/13 09:26:18	08/08/13 09:26:18	Sampled		HUB_NC058026	NAS_DVIPA_SrvAccept_Efncy_Frac
Open			MS_Offline	V511N3:LP07:KN3AGENT			08/07/13 15:20:00	08/07/13 15:20:00	Sampled		HUB_NC058026	MS_Offline
Open			MS_Offline	TCP/IP:LP07			08/07/13 15:20:00	08/07/13 15:20:00	Sampled		HUB_NC058026	MS_Offline
Open			MS_Offline	TCP/IP:LP07			08/07/13 15:20:00	08/07/13 15:20:00	Sampled		HUB_NC058026	MS_Offline
Open			MS_Offline	SVTPLEX:LP07:V511N3:KOBDR			08/07/13 15:20:00	08/07/13 15:20:00	Sampled		HUB_NC058026	MS_Offline
Open			MS_Offline	SVTPLEX:LP07:V511N3:KOBDR			08/07/13 15:20:00	08/07/13 15:20:00	Sampled		HUB_NC058026	MS_Offline

Message Log

Status	Name	Display Item	Origin Node	Global Timestamp	Local Timestamp	Node	Type	ID
Open	NAS_DVIPA_Target_Serv_Resp_Rate	CNMZO		08/08/13 09:26:18	08/08/13 09:26:18	HUB_NC058026	Sampled	NAS_DVIPA_Target_Serv_Resp_Rate
Open	NAS_DVIPA_WLM_Weight	CNMZO		08/08/13 09:26:18	08/08/13 09:26:18	HUB_NC058026	Sampled	NAS_DVIPA_WLM_Weight
Open	NAS_DVIPA_SrvAccept_Efncy_Frac	CNMZO		08/08/13 09:26:18	08/08/13 09:26:18	HUB_NC058026	Sampled	NAS_DVIPA_SrvAccept_Efncy_Frac
Open	MS_Offline	V511N3:LP07:KN3AGENT		08/07/13 15:20:00	08/07/13 15:20:00	HUB_NC058026	Sampled	MS_Offline
Open	MS_Offline	TCP/IP:LP07		08/07/13 15:20:00	08/07/13 15:20:00	HUB_NC058026	Sampled	MS_Offline
Open	MS_Offline	TCP/IP:LP07		08/07/13 15:20:00	08/07/13 15:20:00	HUB_NC058026	Sampled	MS_Offline
Open	MS_Offline	SVTPLEX:LP07:V511N3:KOBDR		08/07/13 15:20:00	08/07/13 15:20:00	HUB_NC058026	Sampled	MS_Offline
Open	MS_Offline	SVTPLEX:LP07:V511N3:KOBDR		08/07/13 15:20:00	08/07/13 15:20:00	HUB_NC058026	Sampled	MS_Offline

Hub Time: Thu, 08/08/2013 09:31 AM Server Available Enterprise Status - nc058026.tivlab.raleigh.ibm.com - SYSADMIN

Done Internet | Protected Mode: Off 120%

Scenario 3: DDVIPA Server Health Navigation

Distributed DVIPA Server Health

Tivoli Enterprise Portal Welcome SYSADMIN Log out

File Edit View Help

Navigator View: Physical

- Enterprise
 - Windows Systems
 - z/OS Systems
 - SVTPLEX:MVS:SYSPLEX
 - LP34
 - LP35
 - ZOR
 - NetView Agent
 - CNMEMA62.ZOR:KNAAGENT
 - NetView
 - CNMZO
 - DDVIPA Server Health
 - Workspace
 - ✓ Distributed DVIPA Server Health
 - Distributed DVIPA Unhealthy Servers
 - Take Action...
 - Link To...
 - Launch...
 - Situations...
 - Show Navigator List...
 - Split vertically
 - Split horizontally
 - Print Preview...
 - Print...
 - Find...
 - Properties...

Physical

Distributed DVIPA Server Health Summary

WLM Weight

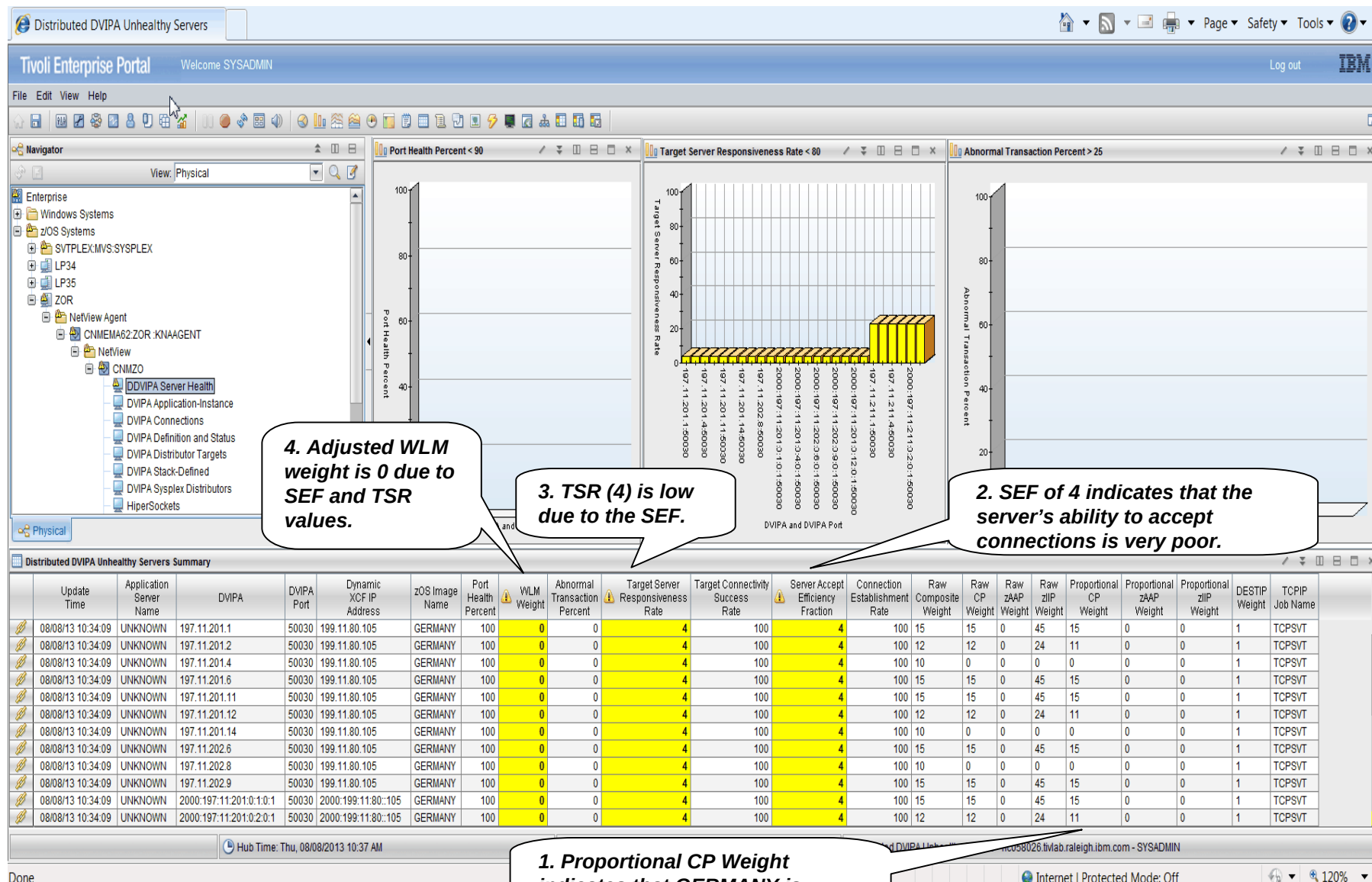
DVIPA and DVIPA Port

| Update Time | Application Server Name | IP Address | z/OS Image Name | Port Health Percent | WLM Weight | Abnormal Transaction Percent | Target Server Responsiveness Rate | Target Connectivity Success Rate | Server Accept Efficiency Fraction | Connection Establishment Rate | Raw Composite Weight | Raw CP Weight | Raw zAAP Weight | Raw zIIP Weight | Proportional CP Weight | Proportional zAAP Weight | Proportional zIIP Weight | DESTIP Weight | TCP/IP Job Name |
|-------------------|-------------------------|--------------|---------------------|---------------------|------------|------------------------------|-----------------------------------|----------------------------------|-----------------------------------|-------------------------------|----------------------|---------------|-----------------|-----------------|------------------------|--------------------------|--------------------------|---------------|-----------------|
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.6 | 623 199.11.81.108 | FRANCE | 100 | 1 | 0 | 100 | 100 | 100 | 100 | 2 | 0 | 0 | 2 | 0 | 0 | 1 | TCPSVT1 |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.80.110 | SPAIN | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.80.106 | BOTSWANA | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.80.108 | FRANCE | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.80.105 | GERMANY | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.81.106 | BOTSWANA | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT1 |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.4 | 623 199.11.81.108 | FRANCE | 100 | 10 | 0 | 100 | 100 | 100 | 100 | 10 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT1 |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.2 | 59447 199.11.80.104 | RUSSIA | 100 | 0 | 0 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.2 | 59447 199.11.82.104 | RUSSIA | 100 | 0 | 0 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT2 |
| 08/13/13 13:45:40 | UNKNOWN | 197.11.201.2 | 59447 199.11.80.110 | SPAIN | 100 | 0 | 0 | 100 | 100 | 100 | 100 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | TCPSVT |

Hub Time: Tue, 08/13/2013 01:54 PM Server Available Distributed DVIPA Server Health - nc058026.tivlab.raleigh.ibm.com - SYSADMIN

Done Internet | Protected Mode: Off 120%

Scenario 3: DDVIPA Unhealthy Servers



NetView Sysplex Distributor Management Summary

- NetView provides:
 - Quick insights to help you diagnosis problems related to Sysplex Distributor problems
 - Data to help you do capacity planning
 - Sampled, real-time, and historical data
 - Programmable command interface

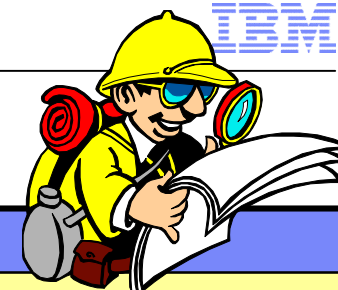
Questions?

Please fill out your session evaluation

- z/OS Communications Server and NetView for z/OS DVIPA (Dynamic Virtual IP Addressing) Management
- Session # 13547
- QR Code:



For more information



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| http://www.rfc-editor.org/rfcsearch.html | Request For Comments (RFC) |
| http://www.ibm.com/systems/z/os/zos/bkserv/ | IBM z/OS Internet library – PDF files of all z/OS manuals including Communications Server |
| http://www.ibm.com/developerworks/rfe/?PROD_ID=498 | RFE Community for z/OS Communications Server |
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| http://www.ibm.com/software/tivoli/products/netview-zos/ | IBM NetView for z/OS Website |
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