Communications Server z/OS V1R5 and V1R6 Technical Update

What's Coming in CS z/OS?

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IPSec

- Integrated IPSecurity support: Communications Server plans to provide support for IP filtering, Internet Key Exchange (IKE), and Virtual Private Network (VPN), without requiring use of the Integrated Security Services Firewall Technologies. These integrated functions are expected to help improve network security configuration, monitoring, scalability, and performance. The Policy Agent can be used as a central configuration point for filter rules and VPN rules. The Traffic Regulation Management Daemon (TRMD) will be enhanced to log IPSec events.

TCP/IP Sysplex operational enhancements: New TCP/IP configuration options and operator commands will help improve operational tasks for TCP/IP stacks in a sysplex and remove the need to manage OBEYFILE profiles.

- When a TCP/IP stack has been removed from a sysplex, a configuration option and an operator command will allow the stack to rejoin the sysplex and restore its configuration.
- A new command will be provided to activate and deactivate a DVIPA, so that a TCP/IP stack can easily obtain or relinquish ownership.

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Self-optimizing:

- Sysplex Distributor will distribute incoming traffic to target stacks within a sysplex using optimal available IP routes. This allows the use of high-speed interfaces such as OSA Express Gigabit Ethernet. In addition, it removes a restriction: Sysplex Distributor need no longer use only dynamic XCF interfaces for packet forwarding.
- Sysplex Distributor will exploit new z/OS WLM support to help optimize workload balancing for TCP/IP servers in a sysplex. Sysplex Distributor will use server-specific recommendations from WLM that reflect how well target servers meet their service class goals.

Self-healing:

- Sysplex Distributor will use key performance indicators such as connection backlog queues to supplement existing measurements and WLM recommendations. This will help improve load balancing.

Self-configuring:

- TCP/IP will be able to rejoin a sysplex once problems that have triggered an automatic takeover have been resolved. When a stack rejoins a sysplex, it can automatically restore its original configuration and resume ownership of any DVIPAs for which it is the primary owner. This expands on the TCP/IP Automatic Takeover function introduced in z/OS V1.6.

Self-protecting:

- The new z/OS Load Balancing Advisor will make sysplex information available to network-based load balancers (such as content switches and load balancing appliances), so that they can make better load balancing decisions. This helps protect busy target servers in a sysplex from being overloaded with new requests when they are already in danger of failing to meet their WLM service class goals or lack displaceable capacity. By helping meet WLM goals in a sysplex while allowing you to take advantage of networkbased load balancers, z/OS Load Balancing Advisor helps maximize availability and optimize performance.

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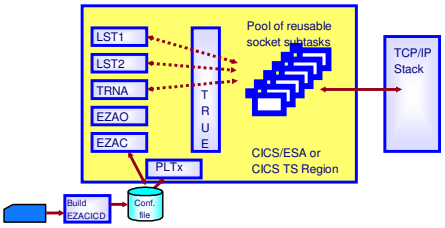
CICS sockets enhancements are planned to improve application performance by:

- Allowing CICS sockets to use the CICS Open Transaction Environment (OTE). This is designed to reduce task switching in CICS environments.
- Helping to reduce the overhead of CICS sockets tracing and monitoring processing when these facilities are not activated.
- Allowing the IP CICS Sockets Task-Related User Exit (TRUE) to be loaded above the 16MB line, pro-viding virtual storage constraint relief.



z/OS Firewall Technologies

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The firewall technologies functions that are shipped with z/OS	Included in Communications Server	Included in Security Server Free	Included in Security Server Non-free	Useful in firewall configuration	Useful as self-protection layer in z/OS
IPv4 packet filters	✓			✓	✓
IPv4 IPSec (VPN)	✓				✓
IPv4 Network Address Translation	✓			✓	
Internet Key Exchange (IKE)		✓			✓
Command-line configuration		✓		✓	✓
AIX/Windows GUI configuration		✓		✓	✓
FTP Proxy server			✓	✓	
SOCKS V4 server			✓	✓	

- The z/OS firewall technologies were originally a split-responsibility between the Security Server and the Communications Server on OS/390 (z/OS).
- IP Packet filtering, IPSec (VPN), and IKE have been transferred to the Communications Server and will in z/OS V1R7 be fully integrated into the Communications Server and extended with IPv6 support.
- Configuration of the integrated functions will be simplified via a new configuration GUI component, and based on the current Policy Agent infrastructure.
- There are currently no plans to enhance the current command-line configuration, current GUI configuration, NAT, FTP proxy, or SOCKS server functions - these functions will likely be removed at some point in time.

Integrated IPSec/VPN in CS z/OS V1R7

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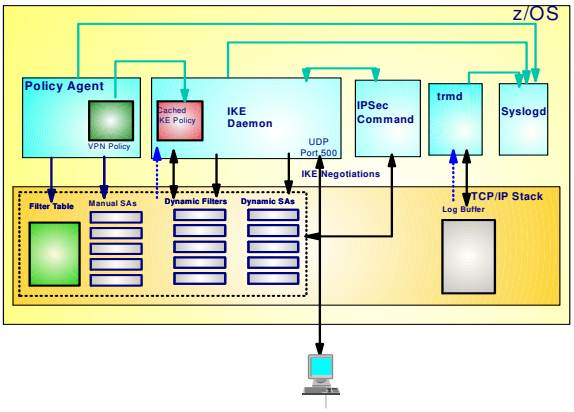
- Features
  - Configuration support
    - Optimized for z/OS host-to-host and z/OS host-to-gateway (z/OS gateway still supported)
    - NAT Traversal support
  - Simplified infrastructure
    - Eliminates need for FW Technologies daemons
  - Simplified configuration
    - New configuration GUI for both new and expert users
    - Direct file edit into local configuration file
    - Reduced definition, more "wildcarding"
  - Improved serviceability
    - Improved messages and traces
  - Default filters part of TCP profile
    - More granular control before policy is loaded
  - Administrative controls
    - pasearch, new IPSec command
- Complete IPSec, filtering, and IKE solution part of z/OS Communications Server
  - Alternative to Firewall Technologies
    - New IKE daemon and configuration
- Makes use of existing Communications Server Infrastructure
  - TCP/IP stack - IPSec and IP filtering
  - Policy agent - reads and manages IPSec and IKE policy
  - trmd - monitors TCP/IP stacks for log messages



The Journey to IPv6 for z/OS Communications Server

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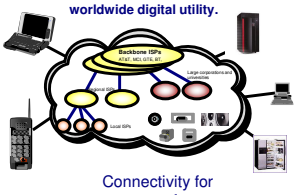
IPv6 deployment phases

- The first phase (z/OS V1R4)
  - Stack support for IPv6 base functions - (APIs, Protocol layers)
  - Resolver
  - High speed attach (OSA Express QDIO))
  - Service tools (Trace, Dump, etc.)
  - Configuration and netstat, ping, traceroute, SMF
  - Static Routing
  - FTP, otelnetd,unix rexec, unix rshd/rexecd
- The second phase (z/OS V1R5)
  - Network Management
    - Applications and DPI
    - Version-neutral Tcp/Ip Standard MIBs
    - Additional SMF records
  - Applications/Clients/APIs
    - Tn3270 server,CICS sockets, sendmail,ntp,dcas, rxserve,rsh client
  - Enterprise Extender
  - Point to Point - type DLCS
  - Dynamic Routing Protocol w/ OMPROUTE (only RIPng)
- The third phase (z/OS V1R6)
  - Sysplex Exploitation (Dynamic VIPA, Sysplex Distributor functions)
  - Dynamic Routing Protocol w/ OMPROUTE (OSPFv3)
  - Additonal Network Management MIBs
  - HiperSockets DLC
- After z/OS V1R6
  - Integrated IPSec
  - Advanced Socket APIs
  - Extended Stats MIB, OSPFv3 MIB
  - Intrusion Detection Services
  - IPv6 mobility support

Objective is to have IPv6 production ready on the platform when you need it!

The Internet - a worldwide digital utility.



Connectivity for ***anyone*** from ***anywhere*** (car, home, office) to ***anything***!

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