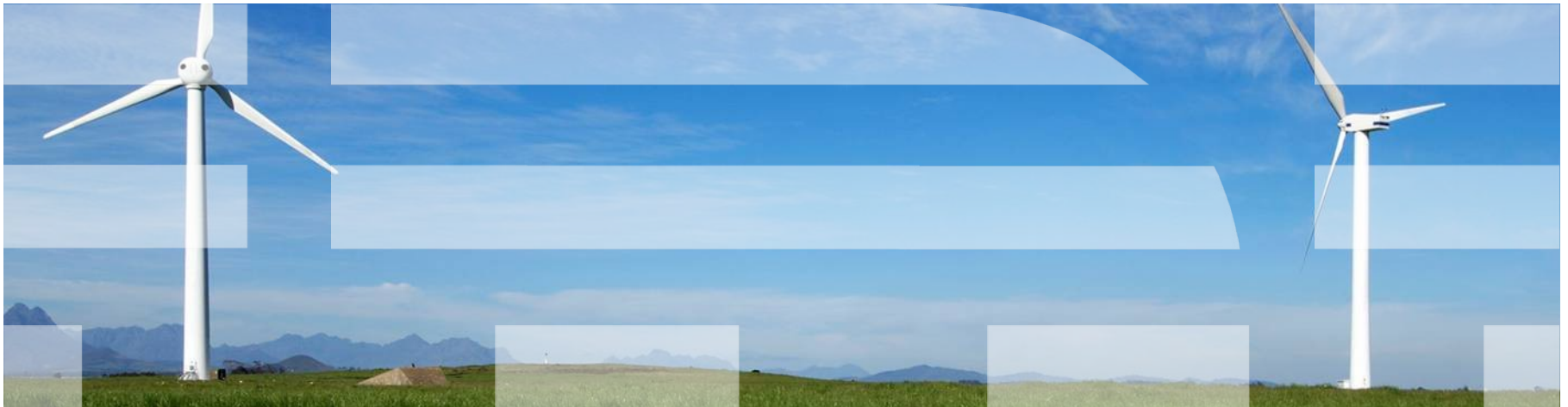


Don't Judge an LDAP Server By Its Name

SHARE Orlando

August 2011

S9545



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Agenda

- Re-introduce IBM Tivoli Directory Server (TDS) for z/OS®
- Highlight Key TDS for z/OS Optimizations
 - WLM
 - ICSF
 - RACF
 - SMF
 - Sysplex
 - DB2
 - ARM
 - System SSL
 - Network Authentication Service (Kerberos)
- Review TDS for z/OS Architecture
- What's new with TDS for z/OS?
 - z/OS V1.10
 - Plug-in
 - AES encryption using ICSF
 - SSL certificate mapping
 - Operations Monitor support
 - RACF custom profiles

Agenda (cont...)

- z/OS V1.11
 - Advanced Replication
 - WLM support
 - RACF resource profiles
- z/OS V1.12
 - Filtered Access control
 - Password Policy
 - Activity Log updates
 - Salted SHA support
- z/OS V1.13
 - Administrator Roles
 - 64 bit TDBM
 - Paged/Sorted Search
 - SHA-2 Support
 - Group Specific size/time limits
- List References to Publications

LDAP on z/OS

- LDAP Client C APIs first introduced with OS/390 V2R4
- LDAP Server first introduced on OS/390 V2R5 as “SecureWay Security Server LDAP Server” (ISS adopted as unofficial acronym)
 - Port from distributed code base
- OS/390 V2R10 first major shift from distributed code base with introduction of TDBM
- z/OS V1R6 new LDAP Client C APIs introduced
 - 64 bit support
 - Rewritten & Optimized for z/OS
- z/OS V1R8 new LDAP Server introduced
 - Rewritten & Optimized for z/OS (more later....)
 - New Name: IBM Tivoli Directory Server for z/OS (TDS adopted as unofficial acronym)
- z/OS V1R8 – z/OS V1R10: both TDS and ISS shipped as part of z/OS
 - z/OS V1R10 was LAST release with ISS

TDS on z/OS

- Despite Tivoli and no LDAP in name, TDS for z/OS is:
 - Base component of z/OS, i.e., not a priced feature
 - Supports LDAP V3
 - New code base, fully optimized for z/OS

- TDS and System z Optimizations classified by Key System Traits
 - Reliability
 - Availability
 - Serviceability
 - Scalability
 - Security

- Reliability & Serviceability
 - Same extensive test cycle and service process as all base components
 - Dynamic trace and z/OS Component Trace to help ffdc and use of IPCS CTRACE routines to process trace data

TDS on z/OS

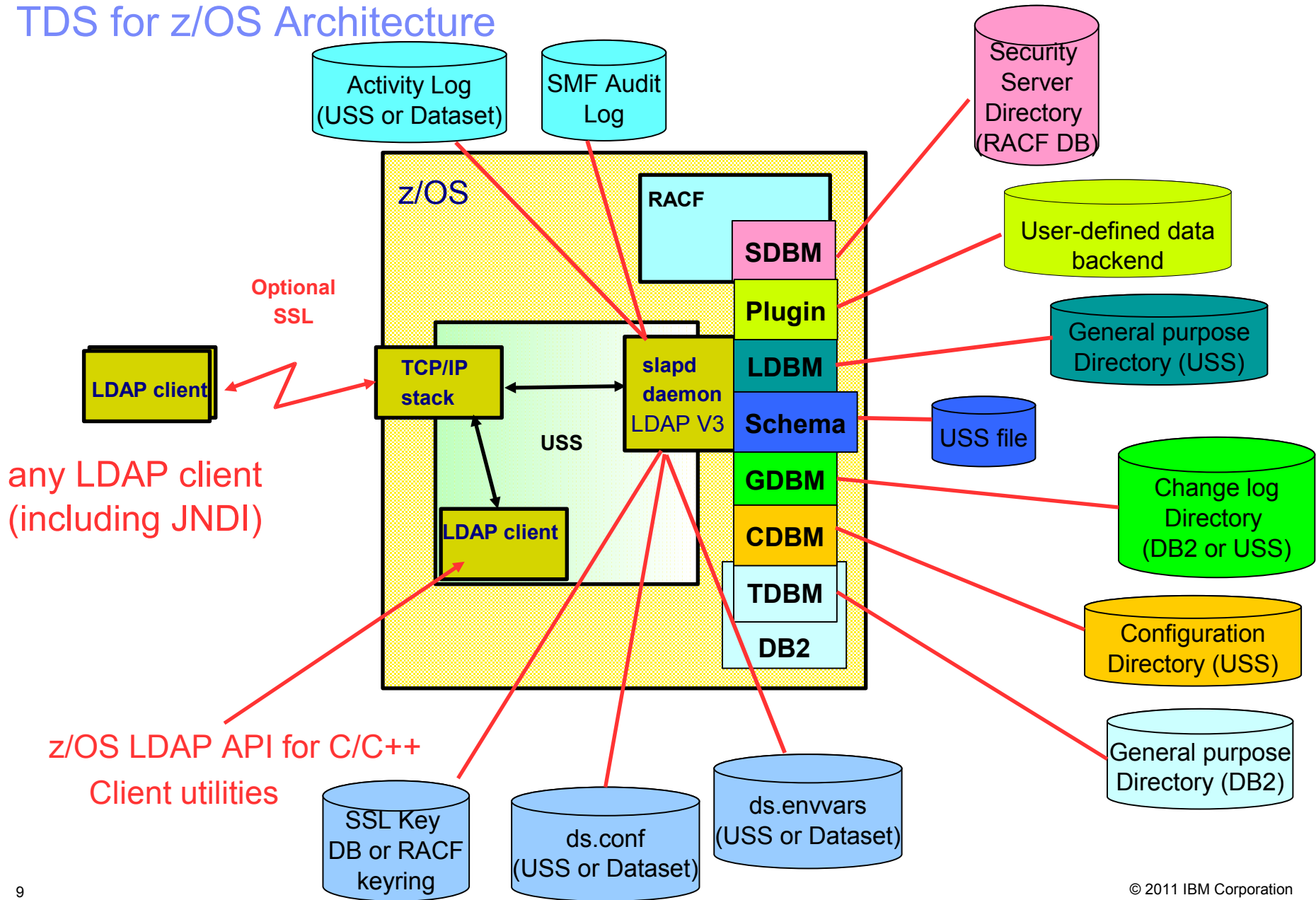
- Availability
 - Supports Parallel Sysplex Clustering Technology to allow clustering of many server instances
 - VIPA/DVIPA helps ensure client requests can be handled even if server instances are down
 - Supports Workload Manager to help ensure overall System z availability/performance requirements met
 - Supports Automatic Restart Manager to help recover server instances in case of abend
- Scalability
 - DB2 support (data sharing and partitioning support)
 - 64 bit mode
 - Rewrite resulted in better performance/CPU utilization
- Security
 - Tight RACF co-existence/relationship
 - LDAP access to RACF users, groups, user-group connections, general resource profiles, SETROPTS settings
 - LDAP authentication against RACF database
 - Leverage System SSL for SSL communication
 - Leverage ICSF for crypto for hashing and encryption
 - Supports Integrated Security Services Network Authentication Service for Kerberos authentication
 - Cuts SMF Audit Records

TDS vs ISS

- TDS fully supports 64 bit
 - ISS did not.
- TDS supports a file based backing store (LDBM), in addition to DB2 (TDBM)
 - ISS only supported DB2 (TDBM)
- TDS fully supports WLM, Sysplex, CTRACE, ARM
 - ISS did not
- TDS supports plug-ins
 - ISS did not

- Migration instructions available for moving from ISS->TDS
 - Recommended to unload LDAP data from ISS and reload to TDS

TDS for z/OS Architecture



What's new with TDS for z/OS V1R10?

- Passphrase support
 - Supports native/RACF passphrases for LDAP authentication
- Plug-in
 - TDS allows custom user exit code to be introduced
 - 3 basic entry points: Pre, Post, Client
 - Pre: user exit called prior to TDS processing operation
 - Post: user exit called after TDS processes operation
 - Client: user exit called instead of TDS processing operation
 - APIs available to plug-ins
- AES encryption using ICSF
 - TDS can use AES with keys in CKDS for encrypting passwords stored in TDS
- SSL certificate mapping
 - Allows SDBM operations after certificate/SASL/native auth binds to LDAP
- Operations Monitor support
 - Helps monitor real time traffic to detect DOS attacks, performance issues
- RACF custom profiles
 - SDBM can now set and use RACF custom fields

What's new with TDS for z/OS V1R11?

- Advanced Replication (original replication model is still supported. Refer to Basic Replication)
 - Distributed TDS replication model implement in TDS for z/OS
 - Additional Replication Topologies available
 - Peer-Peer
 - Gateway
 - Forwarder
 - Master-replica
 - Additional tools/extended operations to manage replication environment
 - Server's role, i.e., master, peer, replica, forwarder, for a given topology is determined at a subtree level (as opposed to a backend basis)
 - Peer-peer supports conflict resolution
 - Filtered/partial replication
 - Scheduling
- WLM support
 - TDS interfaces with WLM's health service to indicate a health value
 - Useful for TCP/IP to route client requests
- RACF resource profiles
 - Allow SDBM access of RACF resource profiles and SETROPTS settings

What's new with TDS for z/OS V1R12?

- Filtered Access control
 - Access control can be extended to take into account dynamic characteristics of the user
 - Time of access
 - Day of access
 - Encrypted connection
 - Bind mechanism
 - Client's IP
 - aclEntry/entryOwner values now can be extended with filters that are checked against the client's dynamic characteristics
 - Standard values are “logically” combined with filtered ACL values using set arithmetic, i.e. UNION, INTERSECT, REPLACE
- Password Policy
 - Establish/enforce password rules for passwords stored in TDS
- Activity Log updates
 - Allow for activity log roll-over
 - Allow for IP filtering of activity log entries
- Salted SHA support
 - Support Salted SHA hashing of passwords stored in TDS

What's new with TDS for z/OS V1R13?

- Administrator Roles
 - Supports an Administrator Group
 - Addresses the issue of having more than one administrator share the same credentials
 - Also, addresses “all admins are not created equally”
- 64 bit TDBM
 - Support 64bit TDBM
- Paged/Sorted Search
 - Support Paged/Sorted results for LDAP search commands
- SHA-2 Support
 - Support SHA-2 hashing of passwords stored in TDS
- Group Specific size/time limits
 - Establish size/time limits via group membership
 - In the past, admin had no limits, and all other clients were governed by value in ds.conf

QUESTIONS?

LDAP Related References & Publications

- z/OS Hot Topics Newsletter
http://www-03.ibm.com/systems/z/os/zos/bkserv/hot_topics.html
 - #22, March 2010: “We’ve got your back(bone)”
 - #25, August 2011: “Don’t judge an LDAP server by its name!”

- z/OS Publications
<http://www-03.ibm.com/systems/z/os/zos/bkserv/>
 - IBM Tivoli Directory Server Client Programming for z/OS
 - IBM Tivoli Directory Server Messages and Codes for z/OS
 - IBM Tivoli Directory Server Plug-in Reference for z/OS
 - IBM Tivoli Directory Server Administration and Use for z/OS

- IBM Education Assistant
http://publib.boulder.ibm.com/infocenter/ieduasst/stgv1r0/index.jsp?topic=/com.ibm.iea.zos/plugin_coverpage.html
 - V1R11 – Security
 - Accessing RACF Resource Profiles through the IBM Tivoli Directory Server for z/OS
 - Introduction to configuring advanced replication in the IBM Tivoli Directory Server for z/OS
 - V1R12 – Security
 - Password policy in the IBM Tivoli Directory Server for z/OS