RAO KASHIF GOHAR

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CAREER SUMMARY

Experienced Administrator/programmer of different database platform including Oracle, Postgres and mySQL. Worked on various projects for nearly eighteen years at different positions like lead database administrator, developer, and programmer analyst. Progressive knowledge & experience in system architecture, development, implementation & support of client/server web based applications uisng web related technology PHP, Java, JSON, Jquery, Java Scripting , AJAX.
A multi-skilled determined professional with a solid background of managing complex functional projects in various environments. Able to manage stakeholder expectations and willing to take full responsibility for the delivering of project objectives. Responsible for delivering projects against agreed scope, budget, schedule & customer expectations. Doing this whilst supervising, directing & motivating teams of multi-discipline contractors & employees.
Database administrator (DBA) with extensive experience designing, coding, testing and supporting next-generation database solutions in Oracle enterprise, PostgreSQL and MySQL environments. Responsible for database backup procedures, disaster recovery and contingency procedures.

PUBLICATIONS

1. Persistent identifier practice for big data management at NCI. Data Science Journal. In press.
   J. Wang, N. Car, B. Evans, K. Gohar, C. Trenham and L. Wyborn. (2017)

2. The NCI High Performance Computing (HPC) and High Performance Data (HPD) Platform to Support the Analysis of Petascale Environmental Data Collections

3. NCI's High Performance Computing (HPC) and High Performance Data (HPD) Computing Platform for Environmental and Earth System Data Science

4. The A, B, C, D, E, F of Multipurpose Active Data Management Plans to Facilitate Multiscale Interdisciplinary Science

PROFESSIONAL SKILL

Database Administration	Puppet Infrastructure Developer	Google Cloud Infrastructure
Virtualization & Cloud Computing	Open Stack Developer	Grid Computing
IOS/Android Development	Google Cloud / AWS Platform Specialist	High Performance Computing
Performance Modelling & Monitoring	Data Infrastructure Specialist	Web Application Security

EDUCATION

Bachelor of Engineering **(1997)**
N.E.D. University of Engineering & Tech., Karachi, Pakistan.

Masters in Information Technology **(2004)**
University of Canberra, Canberra, Australia.

COMPUTER SKILL

RDBMS & Tools: Oracle Database, PL/SQL, Oracle Web DB, Oracle Developer Suit, Oracle Enterprise Management, Oracle Application Server, mySQL Database, mySQL Enterprise Monitor, mySQL Workbench, SQL Server, PostgreSQL, H2, Sybase

RDF Databases & tools: RDF Datastore, Neo4j Graph Database, MongoDB, SPARQL, Cypher

Software/Languages: Python, Java, Django, MS Project, Visual C++, AutoCAD 2016, MS Office, Crystal Report, Adobe Photoshop, Xcode, Perl, Swing, Obejective-C, Swift, Geonetwork, Jenkins

Operating System: Windows 10, Linux (CentOS 6 & 7),Apache Web Server, Tomcat, Nginx, Mac OS, Solaris

Tools: HTML5, CSS3, DHTML, Java Scripting, PHP, XML ,AJAX, Xquery,XSLT,XML Schema,XPATH, JBoss, Open ID, MediaWiki, VMware, JSON, Jquery, JDeveloper, Enterprise Architect Design Model, Web Application Testing, LDAP Server, phpMyAdmin, phpPgAdmin, Bootstrap

Content Management System: Wordpress, Joomla, Drupal

PROFESSIONAL EXPERIENCE

Australian National University (Australia) (Oct'05 ---- Date)

National Computational Infrastructure

Google Cloud Infrastructure

Currently setting up fully customizable Application & Database Cluster in google cloud environment with complete backup and monitoring routines and also with a web interface to manage. Fully automated process of moving application and database from development environment to production environment. Design a graphical web interface using Drupal for monitoring the whole architecture. All puppet configurations are properly managed through a central git repository. Database Cluster comprises of both PostgreSQL and MySQL cluster, both have management nodes, application nodes and data nodes replicating to each other. Both cluster have connection pooling and load balancer enabled.

OpenStack Cloud Infrastructure

Setup fully customizable Application & Database Cluster in open stack environment with complete backup and monitoring routines and have a web interface to manage. Fully automated process of moving application and database from development environment to production environment. Design a graphical web interface using Drupal for monitoring the whole architecture. All puppet configurations are properly managed through a central git repository. Database Cluster comprises of both PostgreSQL and MySQL cluster, both have management nodes, application nodes and data nodes replicating to each other. Both cluster have connection pooling and load balancer enabled.
URL : https://dctcms.nci.org.au

Persistent Identifier Service

Persistent Identifier Service (PID Service) enables resolution of persistent identifiers. The proposed solution is using an approach to intercept all incoming HTTP requests at the Apache HTTP web server level and pass it through to the PID Service dispatcher servlet that implements a logic to recognise a pattern of an incoming request and compare it with one of the patterns configured in the PID. The main purpose of PID is to store a consistent URI for the users that mapped to actual URI so there should be consistency in URI mapping.
URL : http://pid.nci.org.au/

PROVENANCE

Currently working on PROMS Server, an application designed to manage provenance information sent from a series of "reporting systems" which map their processes to a constrained variant of the PROV Data Model. It consists of a RESTful API (Python Flask) that both enforces data policy for incoming provenance information and also makes that information available in several ways.

Provenance Server works as an application layer on top of an RDF triple store (graph database) and required a web server, such as Apache, to broker access to it online.
URL : http://proms.nci.org.au/

Research Data Switchboard

Research Data Switchboard (RD-Switchboard) allows cross platform discovery by connecting data sets from multiple registries. It is an open, collaborative project administered by Research Data Alliance's (RD-A) DDRI Work Group. The way RD-Switchboard operates is analogous to the discovery functions featured on online bookstores such as Amazon.
URL : https://rd-switchboard.nci.org.au/

NCI Data Collection Web Portal

URL : https://datamgt.nci.org.au/

Currently design a software for metadata collection and publishing of metadata into Geonetwork for various projects (Geoscience Australia, AusCover, eMAST, BOM, CSIRO). The utility will provide both insertion of single metadata and also bulk insertion. There are predefined metadata profiles setup as well a general metadata profile setup which is totally customizable according to your needs. All metadata will pass through a validation tool before inserting data into the Geonetwork server. The utility aims to automate the whole process of data insertion so the user don't have to do anything manually.

The NCI metadata creation web portal minimizes the workload for managing metadata records and exposing through the NCI catalogue service. It is critical to manage our catalogue system to enable real-time updates, synchronization and capture the changes along the time. To ensure we can do this, we build this infrastructure under OpenStack DevOps framework so that we can easily recover the system if a node or server is down.

Access privilege system is based on LDAP authentication and also inbuilt user or project validation. The metadata is recorded both in Geonetwork default database as well as NCI metadata database to provide a centralized search utility. The software will also monitor all the routines and records all usage statistics based on every user or project.

In my current position with NCI, I am responsible for the administration of the database servers as well as to support and maintain all the web interfaces which were designed to support the NCI system.
Working on the development of computational tools and techniques. Tasks also involve real-time data management and MDS (Mass Data Storage) management, and administration, as well as writing web services and tools for Grid-Computing services and tools.

Database Administration, Specialist Programmer
I am responsible for the administration of the databases (both MySQL and postgres) running on different servers. The task involves the basic administration of database, backup and restoration of database, monitoring database performance and importing and exporting database from one

server to another. I have developed quite a few small scripts that will automate some of the above processes and monitoring the availability of all the servers 24 hours a day.

Geonetwork Catalogue

GeoNetwork is a catalog application to manage spatially referenced resources. It provides powerful metadata editing and search functions as well as an interactive web map viewer. It is currently used in numerous Spatial Data Infrastructure initiatives across the world**.** GeoNetwork provides an easy to use web interface to search geospatial data across multiple catalogs

For each dataset, we generate a large number of detailed attributes. For datasets, these records are stored within dedicated GeoNetwork servers. The record for the dataset will provide the search term for all dataset records and their associated attributes. If a user wishes to find specific attributes of data (e.g., sea-surface temperature) they can make a search on the relevant dataset attribute on the GeoNetwork server.
URL : https://geonetwork.nci.org.au

DOI (Data Citation)

Data citation refers to the practice of providing a reference to data in the same way as researchers routinely provide a bibliographic reference to outputs such as journal articles, reports and conference papers. A DOI is a type of persistent identifier that indicates a dataset will be well managed and accessible for long term use. With the agreement with Australian National Data Service (ANDS), NCI has the capacity of minting Digital Objective Identifiers (DOIs) for the data products published through NCI data repository. Part of the data management portal deliverable was to enable an initial DOI minting self-service.
URL : https://doi.nci.org.au

Genome Catalogue

Genome sequencing (also known as WGS, full genome sequencing, complete genome sequencing, or entire genome sequencing) is a laboratory process that determines the complete DNA sequence of an organism's genome at a single time. Genome Catalogue provides a web interface to access to whole genome sequencing on the HiSeq X Ten platform is exclusively available to researchers. The researchers will send their samples (DNA) for sequencing and the interface will provide analysis and processing of the sample data and deliver the sequenced data through a cloud based platform.

The application protects all data against cyber threats while staying compliant and provide vulnerability management, security configuration management and log intelligence which delivers superior detection, prevention and response solutions for cyber security threats. Our advanced security automation with enterprise integration will give fast actionable insights while our deep endpoint-intelligence gives the high fidelity asset-visibility with business-context.

URL : https://genome-catalogue.nci.org.au

Database Infrastructure on VMware

Responsible for database administration for a large and complex database infrastructure (13 servers) using Oracle, Postgres and MySQL database platforms on VMware virtualization platform. Using VMware addresses many difficult design problems such as scalability, high availability, and resource isolation that traditionally exist in the physical environment. With VMware features and tools, I have design database solutions that scale on demand to meet any throughput or organizational growth requirements; implement higher availability and disaster recovery solutions with less complexity; and leverage available hardware resources while maintaining full application isolation
Responsibilities included performance & tuning, database design, data modeling, database installation, technical support. Tested, implemented, and supported database replication including both Postgres and MySQL Server Replication types in an editing environment.

Geoscience Database

Assisted with the design, implementation and support a multi-terabyte (48 TB) Geo Spatial Postgres Database for Geoscience Australia. Develop database solutions by designing proposed system; defining database physical structure and functional capabilities, security, back-up, and recovery specifications. Maintain database performance by identifying and resolving production and application development problems; calculating optimum values for parameters; evaluating, integrating, and installing new releases; completing maintenance. Developed an expert monitoring system for automatically detecting database performance problems.
In addition to building a close relationship I also defined the accountability resolutions to help long term problem solving pertaining to shared technical responsibilities. Focal point for all planning and execution activities for the technical environments involved. Accountable for the following tasks: Initial project planning, Development of project scope, defining project guidelines, Resource coordination (internal and contracted), Testing coordination. Manage project plans and project resource requirements and budget. Design a distributed backup and recovery procedures for 48TB data to minimize the downtime.

LDAP Server

Strong experience in Enterprise Security Domain. In-depth knowledge of LDAP and Identity & Access management products. Designed LDAP Schemas, DITs to implement enterprise wide centralized repository. Responsible for designing, administrating creating and documenting the new ACL policies enterprise LDAP.

Web Application Security

Responsibilities include the coverage of information security technologies and markets, security program execution, advanced threats, network-based security technologies, mobile device security and cloud-related security issues. Specializing in network security assessments, perimeter defenses, log analysis, information security monitoring, and risk analysis.

Design a secure web infrastructure for both static and dynamic web applications from malicious attacks that may expose private information. Security is applied to the server level and application layer specifically to protect against unauthorized access and attacks.

Git Repository Setup

Setup a private Git Repository server to store all the puppet configuration files for setting up the cloud infrastructure. Git is a code hosting platform for version control and collaboration. It lets you and others work together on projects from anywhere if you are working in a team environment. All source code files stores in a secure environment with easily accessible online.

URL : https://vlrepos.nci.org.au

DB Backup

Providing highly available database and application infrastructure according to Business Continuity requirements using database replication Installed and configured backup agents according to specific settings for security and streamlined data flow. Organized regular audits of backup configurations to ensure quality of service. The application supports different kinds of database platform including Postgres, MySQL, Oracle, & SQL Server.

URL : https://dbmgmt.anu.edu.au

Software Registry (Grid Computing)

The software registry contains a list of all software around the APAC (Australian Partnership for Advance Computing) partner systems, including computational or data systems. The registry describes details of how to use the software on each system, including how to enable the software in your environment, and an example script of how to run the software as part of a batch job. Where possible software user guides are provided. Special license conditions for using the software are also included.

Scope

A website interface which automatically tracks jobs and allows relevant searches on completed jobs. All the job characteristics like cpu performance, system time, system usage, node load, disk IO, network information and so many other information is retrieved from the PBS servers from different host. User authenticating is being done via LDAP servers. A comprehensive utility which provides jobs information in a detailed and easy to use graphical presentation. A comprehensive site access privilege system which can allow users to use certain features of the system and these privilege information is maintained automatically by the administrator of different host.

WebDB

WebDB is a web based database monitoring interface design in python, php and MySQL. WebDb is currently tracking almost 42 databases which are further categorized in the form of different clusters. The system has the ability to track both mySQL and PostgreSQl databases running on different servers . The system can handle different version of both mySQL and postgres running on the same server or different servers.
It provides information like database connections, system load, sizes, performance and many more. It also has a comprehensive search facility which will allow you to refined your search and also you can enter any search criteria as a comma separated list to enhance your search ability and saving time.

Role : Database Administrator / Web Developer

Environment: Python, PHP, Shell scripting, Linux, PostgreSQL, mySQL,Java scripting, Geonetowrk, phpMyAdmin, phpPgAdmin, HTML, CSS

IT Miracles (Australia) (Jun'02 **----** Oct'05**)**

e-Build (for MAK Developers)

e-Build industry-leading estimating software and wide variety of building costs data you can produce accurate, competitive quotes faster – freeing up time for the more important things in life. online construction estimating software speeds up your estimates, cutting time spent on paperwork and giving you more time to get on with the job. The user-friendly tool ensures fast and accurate quantity take-offs are individually transferred into your estimate. PHP, HTML, Python and mySQL used for the design of the system.

e-Workshop (for Everyday Auto Repairs)

E-Workshop is a portal website accounting and management system deisgned in PHP, python and mySQL. The aim of the system is to provide quality and timley service to their esteemed customers. A comprehensive utility which provides client information in a detailed and easy to use graphical presentation. A comprehensive site access privilege system which can allow users to use certain features of the system and these privilege information is maintained automatically by the administrator of different host. The application embracing every aspect of workshop management such as manpower planning, general accounting and inventory management.

Federal Taxis

Federal Taxi is the Internet's top ranked online book keeping site which provide huge range of information and manage all the processes relating to the daily work of an operator. It is a portal site dedicated to the operator of the cab industry. Through its range of features, Federal Taxis aims to make

the daily routine process of an operator simpler, or perhaps more easier. Federal Taxis provides standards-based, cross-platform solution which helps all the drivers an opportunity to provide information about their taxi shifts in an hassle free manner and easy to use style.

Al-Bait POS

Al-Bait Spice Centre is a Canberra based shopping store mainly interested in selling asian products to the local communities and is committed to provide the customer the best online shopping experience on the web. Designed & developed the online front end of the store using the tools PHP, HTML, Java scripting, FrontPage. The website displays all the features of the business in a graphical & easy to use style.

IT Miracles

Design & develop a website for a Canberra based software consultancy which provides application development, project planning & management, system design & integration as well as E-Commerce Solutions.

Role : Programmer Analyst / Database Administrator / Web Developer

Environment: Windows 2000/XP, PHP, HTML, Java Scripting, mySQL database, Adobe Photoshop, DHTML.

EZYUSE BUSINESS SOLUTIONS (Australia) (Aug'01 **----** Sep'01**)**

Ezyuse Business Solution is a portal site design to help their clients providing online support, management of frequently asked questions, news about new products and also provides download facility of patches or updates relating to their back office software. Site designed on server side scripting language PHP as a front-end tool and mySQL database is used on back-end side.

Role : Programmer Analyst / Database Administrator / Web Developer

Environment: Windows 2000, PHP (Personal Home Page), HTML, Microsoft Front Page, IIS 5.0, Java Scripting, mySQL database, Adobe Photoshop, Java Applets, DHTML.

COMPUNET ONLINE PVT. LTD. (Pakistan) (Jun'00 **----** Dec'00**)**

Online Flight Reservation System

The Online Flight Reservation System is designed to offer the capabilities of low-cost and reliable online seat reservation functionality to small and medium sized airlines. Primary role is to create and maintain database in support of the business application requirements, including monitoring and maintaining high level of database availability, performance, integrity and security.
The system features a web-based graphical user interface to minimizes staff training time and employs the Internet as its wide area network backbone to reduce networking costs.

Online Billing System

Completely modeled and designed the billing system for users of CompuNet online (Pvt) Ltd., leading Internet service Provider Company In Pakistan using Oracle 8.0 as backend, Developer/2000 as a front end tool and Case tool Erwin for the data modeling by Logic works .The Online User Billing System is used to keep a track of Internet services provided to users, creating users, deleting users, switching & maintaining different policies & various reports on monthly & weekly basis.

Environment: Red Hat Linux 6.0, Windows NT 4, Apache Web Server, MS Proxy Server, Oracle Server 8.0, Developer 2000, PHP (Personal Home Page), HTML, Microsoft Front Page

TELECARD LTD. (Pakistan) (Jul' 99 ---- Jun'00)

Human Resource & Payroll System

Modeled, design & developed the Human Resource & Payroll Module for TeleCard Ltd. HR & Payroll system is a comprehensive system geared towards achieving organizational goals with speed, accuracy & objectivity. The application embracing every aspect of HR Management such as manpower planning, recruitment and compensation management.

Sales Information Reporting System

Modeled, design & developed the Sales Information Reporting system for TeleCard Ltd. This application is used to keep a track of sales of payphone cards in more than 40 cities across Pakistan. Generate sophisticated & presentation quality reports. SIRS system is a high quality software that has been developed in conformity with any international product.

Role : Programmer Analyst / Database Administrator

Environment: Windows NT 4.0, Oracle Server 8.0, Developer 2000.

SYSTEM CONSULTANT PVT LTD. (Pakistan) (May'98 ---- Jul'99)

Fixed Asset System

Develop a Fixed Asset System in a team of 5 members, project involves calculation of depreciation of fixed assets, Insurance of Assets, Posting of Assets and track of various kind of assets and integration with other modules like General Ledger.

Operation Module Of a Leasing Company

Modeled, design & developed a general operation module for the leasing company. Application is used to keep a track of lease of various household appliances & their repayments in a given schedule.

Role : Programmer Analyst / Network Administrator

Environment: Windows NT 4.0, Wingate Proxy Server, PC-Anywhere, Oracle Server 8.0, Developer 2000.

PROFESSIONAL AFFILIATIONS :

1. Member of Australian Computer Society
2. Member of Pakistan Engineering Council

REFERENCES:

1. **Dr. Jingbo Wang**
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   National Computational Infrastructure (NCI)
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