



# vNS: To Infiniband & Beyond

*Speakers: Daniel Craig, Shiva Subramanian*



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# TCM

## Who We Are

- Dedicated NonStop service experts since '96
- Designing and delivering service solutions to NonStop Customers around the globe
- Onsite and Remote services delivered via Centre of Excellence based in Scotland
- Never lost a Customer, never failed an SLA
- Flexible, responsive, adaptable, trusted partner
- Preserving NonStop knowledge
- HPE Silver Partner





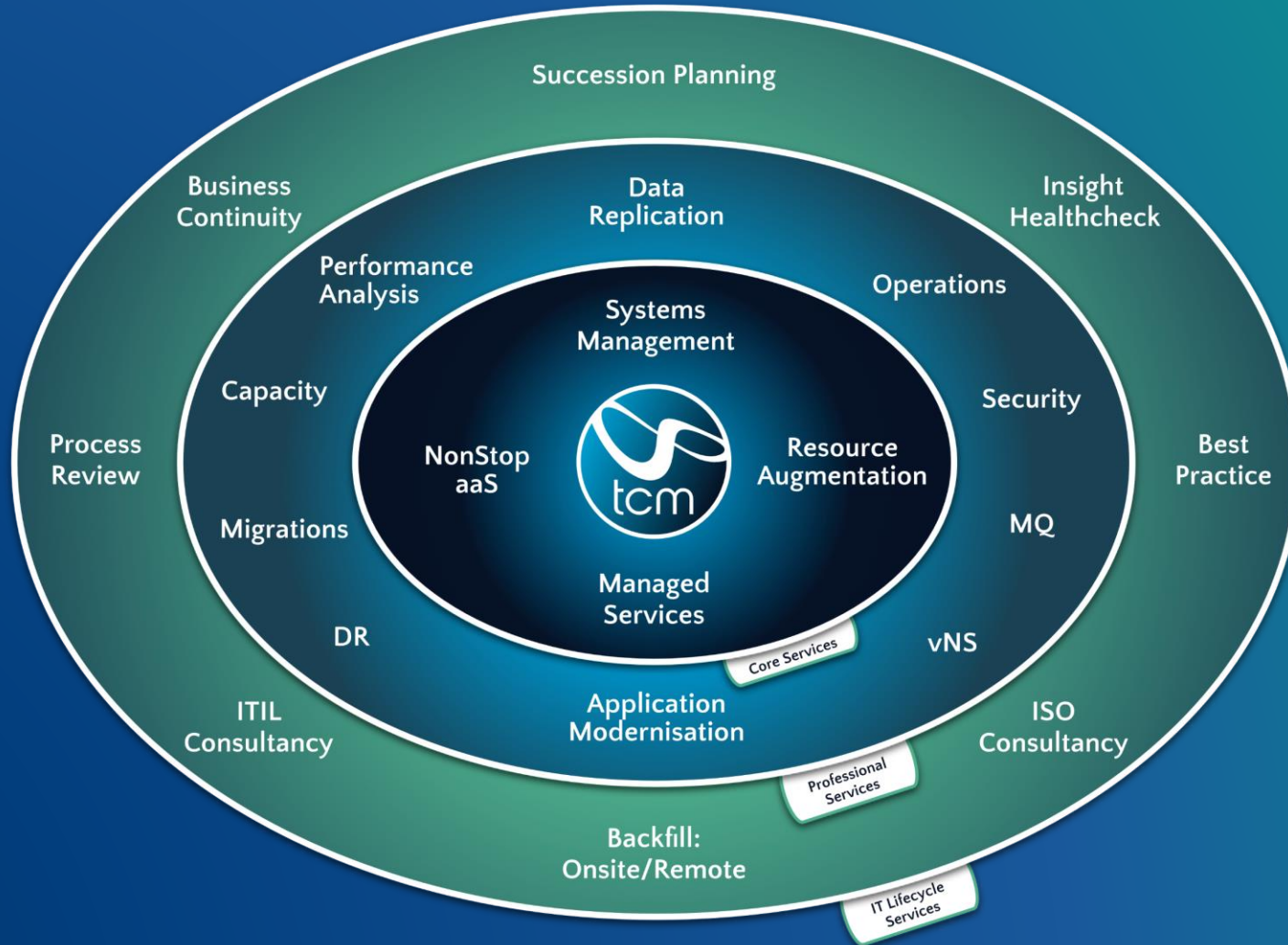
# What We Do

- We offer a 'full suite of services'
- Can build a service around any NonStop requirement
- Bespoke Solutions, tailored to the Customer's PRECISE needs





# The Full Suite of NonStop Services





# The vNS Journey

Shiva Subramanian, TCM



# Why vNS?

- Exciting future possibilities
- Flexibility & Scalability
- Universal hardware
- Low maintenance
- Industry standard virtualisation
- End to end control
- The challenge



# What we did?

- Sourced parts on the open market
- Put it together
- Configured hardware
- Configured VMware
- Built vNS system
  - **4 Nonstop CPUs (High end)**
  - **2 Storage Clims (NSK volumes > 5 TB)**
  - **2 IP Clims & a vNSC**
- HPE – TCM relationship
- What else?





# What we learned?



**Extensively detailed manuals**



**Infinite possibilities**



**No virtual difference**



**KYH (Know your hardware!)**



**Multiple vendor relationships**



**Additional nitty-gritty**

- **Hardware**
- **Configurations**
- **Licenses**





# The NonStop Conundrum



# NonStop then

## Circa 1980s



Share-Nothing architecture



Security & Compliance



Mission-Critical computing



Superior data integrity



RAID1 mirroring



Process pairs



Fault tolerant



Linear Scalability



High Availability



And more...





# NonStop today To infinity & Beyond



POSTMAN



ANSIBLE

GNU Autoconf



Everything from the past



Grafana



Git



Elastic



Jenkins



Java



Visual Studio Code



Python



Eclipse



And more...



Selenium



Gradle



DBEaver

splunk >



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# The TCM NonStop Experiment

So that you don't have to!

- Built a vNS in our garage
- Wrote a legacy NonStop application on Guardian using Enscribe
- Modernized it using C, C++ (still on Guardian) to use SQL/MX
- Ported it to OSS with zero code change
- Implemented DevOps after the OSS port including
  - Git for version control
  - Make for automatic builds
  - Jenkins for Continuous Integration
  - Elastic for Monitoring
  - And more...



# You've got this!

## Your Nonstop OS already ships with -

- Java, Python
- Make
- NSMF (Ansible setup for NonStop)
- FLOSS
- NS HTTP Server (Apache HTTP server)
- Boost Framework
- JDBC/ODBC drivers for SQL/MX

## Your Organisation might already have –

- A centralised Git Repository with GitHub or GitLab
- A Jenkins master instance
- Ansible instance
- Grafana
- Elastic Stack
- Splunk
- Kafka producer setup

## And on the NonStop, you can install –

- Git
- Jenkins Agent/Master
- Fortify
- Maven
- Gradle
- JMeter
- Artifactory
- Kafka libraries (to talk to Kafka producer off platform)
- Curl to communicate with -
  - Grafana / Elastic Stack / Splunk
  - Prognosis
  - Nagios
- OpenSSL & OpenSSH to communicate with -
  - Ansible
  - Jenkins
  - Git
  - Visual Studio Code
  - Nexus
  - GitHub
  - Selenium
  - Robo
  - SonarQube & more...



# Your journey

Finding out what works for you

- No production impact
- Easy install

Git

Make

- Automate builds
- Create dependencies

- Trigger builds
- Setup notifications

Jenkins

- No production impact
- Monitor everything

ELK Stack

Boost/Selenium

- Automate tests
- Create code coverage

- Trigger tests
- Setup notifications

Jenkins

C, C++, Java

Language set

API Gateway

Rest Interface

VS Code, Eclipse

10K to 1M TPS

Kafka

Modern IDEs

Ansible Orchestration

SQL/MX

DBS for NS & others

Deployment automation

# Quick Recap

- ✓ **A mindset rather than a process**
- ✓ **Shu-Ha-Ri**
- ✓ **Innovations & outcomes without technical debt**
- ✓ **Don't let the jargons put you off!**
- ✓ **Clarity better than certainty**
- ✓ **Collaboration improves business ability**





# Coming soon...

- vNS and down-time-less migrations
- vNS via Azure/Google Cloud
- More modern tools on the NonStop



# Closing Thoughts

- vNS is the future...TCM's challenge is the present
- TCM looking at where can we go with vNS
- Not simply replicating what we do now
- vNS strategy aligns with DevOps mindset
- NonStop is emerging from shadows
- vNS the perfect opportunity to embrace this change
- Benefits compliance, resourcing, general interoperability
- Speak to TCM about your vNS journey





Thank You



Questions?



# TCM – The NonStop Experts

[www.tcm.co.uk](http://www.tcm.co.uk)