Global Scale AND Granular Business Continuity

The IBM *NetView – z/OS – GDPS* Way

There is a huge gulf between supporting limited functionality (say, an application or set of applications) and supporting the complete functionality that binds the totality of business operations together. It is easier to focus on role-based functionality – that's what most of us are preoccupied with (and that's what marketers find easiest to sell) – but very large business systems must be manageable as a whole as well as in parts.

Consider the customers of IBM's z/OS. Their systems tend to be large, complex, and globally distributed. The challenge to support business continuity and a rapid recovery from any outage in the system is considerable. IBM's May 2011 announcements focused on this challenge are welcome news, and, more generally, even more welcome to large businesses with global reach and to those contemplating the complexities involved in managing cloud environments.

NetView 6.1 – Increasing the Scope of Management

NetView for z/OS has roots in network management (both SNA and IP). Its domain extends one hop beyond z/OS elements, but can be extended farther and to heterogeneous platforms by using *IBM Tivoli Network Management* products. Its focus has always been on discovery, mapping, health monitoring, configuration management, and desired state management – the information to support quick problem analysis and resolution within the z/OS domain. Its *Automation Engine* is used to import both performance data and events in a useful way. This engine can be leveraged by *Tivoli Integrated Service Management* components to contribute additional sources of information.

Version 6.1 combines network, system, and job log information in one place. It can harvest information from multiple OMEGAMON[1] instances.   It can forward *Tivoli NetCool OMNIbus* events to NetView. This provides a larger critical mass of information required to manage large business information systems. It is like more recent higher-resolution medical imaging – more detail capture supports better analysis.

Consolidated Messaging Logging – Addressing the Grist of Management

All the data sources mentioned above are presented to various roles of users by CANZLOG (*Consolidated Audit NetView and z/OS Log*). This consolidated message logging allows more sources of data to be brought to bear to automate better decisions in response to events. It gives dexterity. Its business

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[1] OMEGAMON, (pronounced Omega-Mon) developed by IBM Acquisition Candle Corp., provides metrics on operating systems and subsystems (middleware), primarily for the System z platform, but also for other IBM middleware.

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value is particularly high where factors relevant to a situation cross the boundaries from network into applications and jobs. NetView 6.1's enhanced *IP Packet Trace Analysis* provides information that can accelerate the resolution of network issues.

With this capability, and the sophisticated tools and scripts that are at the command of IT administrators, more effective and efficient collaborative management is possible. The single user interface can eliminate the hand-offs that add delays to the inevitable recoveries that are needed in large systems. This is like the diverse teams of doctors who can each bring their particular expertise to better tailor a course of treatment for the complexity that is embodied in a typical patient.

Expanding the Domain of Business Continuity with GDPS

Of course, the value of all this information and all the management expertise depends on systems being available. In a system with many fragile parts, a practice called Business Continuity focuses on supporting continuous operations without undue cost or resource consumption. Business Continuity is usually applied to single hardware elements or applications. Load balancing has brought a more frugal paradigm to farms of hardware clones running the same application – but in large business systems the challenge is different. Many applications run on many kinds of hardware, and the applications often share the same data. The challenge is even more substantial when what-is-to-be-failed over is part of a multi-tier environment with many interdependent applications. IBM's *Geographically Dispersed Parallel Sysplex* (GDPS) has been coordinating dispersed System z IT operations for many years, always working towards the Holy Grail of large scale active-active high availability over large distance – something that would support rapid failover from failing elements to other instances at multiple kinds of scale. z/OS's more-than-minimalist operating system and a plethora of metrics about the breadth of the software and hardware stack provide the basis for meeting this grand challenge. The consolidated logging described above, and the wide variety of data feeds importable to *the NetView Automation Engine*, bring the facts into focus and make a solution practical.

With NetView 6.1 and *GDPS Active/Active*, IBM offers Active-Active failover at unlimited distances with rapid recovery (single-digit minutes – but the ultimate goal is single-digit seconds). The first stage of this capability is Active Standby, where the second system is on standby to take over from a failing system. Since the applications run at both sites so that functionality, at the level of a workload or set of workloads (depending on the dependencies of the parts), can shift between sites.

 "The advantage is that the failover can be very granular – down to the workload level," said Larry Green, Architect of *NetView for z/OS* at IBM. "This is more granular than any other solution and thus more efficient."

Conclusion

Ready access to sufficient information drives good decisions. Avoiding hand-offs lets the decisions be executed in a timely fashion.   Both these capabilities are needed to achieve business continuity across systems at unlimited distance. The beta customers who actively guided and tested these developments are eager to implement them. The rest of us can see an approach that combines granular focus with global reach to provide a state that is desired by large businesses and most implementers of cloud environments. Announcements about the death of operating systems in the past few years may have been premature and, perhaps, ill-considered.