



APPENDIX **C**

Solaris Virtualization Support

In the ISC Solaris Virtualization, zones provide an artificial environment that hide details such as physical devices, the system's primary Internet Protocol (IP) address, and host name from the application. Since the same environment can be maintained on different physical machines, this can be useful in supporting rapid deployment and redeployment of applications.

Virtualization is supported on Solaris using containers (zones) and logical domains.

You need to perform any necessary hardware, OS and virtualization-related configuration steps.

Solaris Zones

Solaris Containers (“containers”) establish boundaries for consuming resources such as memory, CPU time, and network bandwidth. As processing requirements change in line with business needs, one or more of the boundaries of a container can be expanded to accommodate a spike in resource demand. The terms “containers” and “zones” are used interchangeably.

The following installation scenarios are supported in ISC:

- ISC and Sybase in the same zone
- ISC and Oracle in different zones

Other combinations have not been tested and their functionality and performance cannot be guaranteed.

Logical Domains

Logical domains exploit the Chip Multi Threading (CMT) nature of the UltraSPARC T1 and T2 processors. A single chip contains up to 8 CPU cores, and each core has either four hardware (for the T1) or eight hardware threads (for the T2) that act as virtual CPUs. All CPU cores execute instructions concurrently, and each core switches between threads—typically when a thread stalls on a cache miss or goes idle—within a single clock cycle. This lets the processor gain throughput that is lost during cache misses in conventional CPU designs.

Each processor can support as many as one domain per hardware thread—up to 32 domains for the UltraSPARC T1, 64 domains for the UltraSPARC T2, and 128 domains for UltraSPARC T2+ servers with two physical processors.

Alternatively, and in usual practice, a given domain can be assigned multiple CPU threads for additional capacity within a single OS instance. CPU threads and virtual I/O devices can be added to or removed from a domain by an administrator command in the control domain. This change takes effect immediately without needing to reboot the affected domain, which can immediately make use of added CPU threads or continue operating with reduced CPU threads.

In ISC, the following two installation scenarios are supported:

- ISC and Sybase in same LDom
- ISC and Oracle in different LDoms

Other combinations have not been tested and their functionality and performance cannot be guaranteed.