About This Book
关于这本书

Who Needs This Book? | 谁是本书的读者？

It is not MindShare's intention to convince the reader that the InfiniBand networking technology is superior to other networking technologies. As with all of our books, our goal is to provide a detailed description of the InfiniBand technology for those tasked with designing InfiniBand hardware and/or software, as well as those responsible for supporting the technology once it has been deployed. 说服读者相信 IB 网络技术比其他网络技术更高大上并不是 MindShare 的意图。和我们所有的书一样，我们的目标是给两类读者群提供 IB 技术的详细说明，一方面针对那些担负设计 IB 硬件和（或）软件任务的读者群，另一方面针对那些负责提供 IB 技术支持（因为相应的技术已经部署完毕）的读者群。

The MindShare Architecture Series | MindShare 体系结构系列

The MindShare System Architecture book series is published by Addison-Wesley and includes the publications shown in Table 1. MindShare 系统体系结构图书系列是由 Addision-Wesley 出版的，包括了表 1 所列举的出版物。

Table 1. PC Architecture Book Series

Category	Title	Edition	ISBN
Processor Architecture	80486 System Architecture	3rd	0-201-40994-1
	Pentium Processor System Architecture	2nd	0-201-40992-5
	Pentium Pro and Pentium II System Architecture	2nd	0-201-30973-4
	PowerPC System Architecture	1st	0-201-40990-9

Table 1. PC Architecture Book Series (Continued)

Category	Title	Edition	ISBN
Bus Architecture	PCI System Architecture	4th	0-201-30974-2
	EISA System Architecture	Out-of-print	0-201-40995-X
	Firewire System Architecture: IEEE 1394	2nd	0-201-48535-4
	ISA System Architecture	3rd	0-201-40996-8
	Universal Serial Bus System Architecture	1st	0-201-46137-4
	PCI-X System Architecture	1st	0-201-72682-3
Network Architecture	InfiniBand Network Architecture	1st	0-321-11765-4
Other Architectures	PCMCIA System Architecture	2nd	0-201-40991-7
	CardBus System Architecture	1st	0-201-40997-6
	Plug and Play System Architecture	1st	0-201-41013-3
	Protected Mode Software Architecture	1st	0-201-55447-X
	AGP System Architecture	1st	0-201-37964-3

Cautionary Note | 警示说明

The reader should keep in mind that MindShare's book series often deals with rapidly evolving technologies. This being the case, it should be recognized that the book is a "snapshot" of the state of the targeted technology at the time that the book was completed. We attempt to update each book on a timely basis to reflect changes in the targeted technology, but, due to various factors (waiting for the next version of the spec to be "frozen", the time necessary to make the changes, and the time to produce the books and get them out to the distribution channels), there will always be a delay. 读者应当牢记在心，MindShare 的图书系列经常跟快速演进的技术打交道。既然如此，读者须意识到本书只不过是要介绍的技术在此书定稿时候其所处状态的"快照"罢了。我们尝试着及时地去更新每一本书，试图与要介绍的技术之变化保持同步。但是，总是会有延迟，因为多种因素的影响。(比如等待规范的下一个版本的定稿，修改图书必须耗费的时间，印刷新书的时间和将新书递送到分销渠道手里的时间。)

Specifications This Book Is Based on | 本书基于的规范

This book is based on Volumes 1 and 2 of the version 1.0a InfiniBand Specification.
本书是作者基于 IB 规范(1.0a 版本)的卷一和卷二写作而成。

Specification Is the Final World | 规范才是王道

As with all of our books, this book represents the author's interpretation of the IBA 1.0a specification. When in doubt, the specification is the final world. 和我们所有的书一样，本书仅仅代表了作者本人对 IBA 1.0a 规范的解读。如有疑问，请查阅 IBA 规范(详细说明书)。

Organization of This Book | 本书的组织结构

The book is organized as follows: 本书由如下几个部分构成：

Part 1: Introductory Topics. A comprehensive overview of the InfiniBand technology can be gained from this part of the book. The reader who does not need a comprehensive understanding of all the tortuous detail can just read this part. 第一部分：专题式入门介绍。这一部分将会给出 IB 技术的全面概述。如果你并不需要全面深入地了解 IB 技术的具体细节，只阅读这一部分就足够了。

Part 2: QP Creation and Operation. 第二部分：QP 的创建和操作。

Part 3: Protection Mechanisms. 第三部分：保护机制。

Part 4: Detailed Description of the Transport Services. 第四部分：关于传输服务的详细描述。

Part 5: Link and Physical Layer Descriptions. 第五部分：链路及物理层描述。

Part 6: The SM and the SA. 第六部分：子网管理器(SM)和子网监管(SA)。

Part 7: General Services. 第七部分：通用服务。

Appendix: Contains the glossary of terms. 附录：(包括)术语表。

Documentation Conventions | 文档约定

This document contains conventions for numeric values as follows. 本文档包含了如下所示的数值约定。

Hexadecimal Notation 十六进制表示法

This section defines the typographical convention used throughout this book. All hex numbers are followed by an "h." Examples: 本节定义了一系列排版约定，这些约定将贯穿于本书的始终。所有十六进制数都以"h."结尾。例如：

9A4Eh

0100h

Binary Notation 二进制表示法

All binary numbers are followed by a "b." Examples: 所有二进制数都以"b."结尾。例如：

0001 0101b

01b

Decimal Notation 十进制表示法

Numbers without any suffix are decimal. When required for clarity, decimal numbers are followed by a “d.” The following examples each represent a decimal number. 所有没有后缀的数字都代表十进制数。当需要特别澄清的时候，十进制数会以"d."结尾。下面的买一个例子都表示一个十进制数。

16
255
256d
128d

Bits Versus Bytes Notation 位表示法 **v.s.** 字节表示法

All abbreviations for “bits” use lower case. For example: 对"bits"的缩写一律用小写字母。例如：

2.5Gb/s	= 2.5 Gigabits per second.	2.5Gb/s	= 2.5G 位每秒。
2Mb	= 2 Megabits.	2.5Mb	= 2.5M 位。

All references to “bytes” are specified in upper cases. For example: 对"bytes"的缩写一律用大写字母。例如：

10MB/s	= 10 Megabytes per second.	10MB/s	= 10M 字节每秒。
2KB	= 2 Kilobytes.	2KB	= 2K 字节。

Other designations: 其他代表符号：

“lsb” refers to the least-significant bit.	"lsb"代表最低有效位。
“LSB” refers to the least-significant byte.	"LSB"代表最低有效字节。
“msb” refers to the most-significant bit.	"msb"代表最高有效位。
“MSB” refers to the most-significant byte.	"MSB"代表最高有效字节。

Bit Fields (Logical Groups of Bits or Signals) 位域(位或信号的逻辑分组)

In many cases, bit fields are documented as [15:8], with this example referring to bits 8 through 15. 在许多情况下，位域被文档化为形如[N:M]格式，例如[15:8]，指第 8 位到第 15 位。

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Part 1 | 第一部分
Core Concepts | 核心概念

This Part | 这一部分

Part 1 introduces basic concepts and terminology and consists of the following chapters: 第一部分将介绍基本的概念和术语，由如下章节组成：

Chapter 1 – Basic Terms and Concepts.

第 1 章：基本术语和概念。

Chapter 2 – Intro to Attributes and Managers.

第 2 章：属性和管理器介绍。

Chapter 3 – QP: Message Transfer Mechanism.

第 3 章：QP:报文(消息)传输机制。

Chapter 4 – Intro to Transport Types.

第 4 章：传输类型介绍。

Chapter 5 – Intro to Send/Receive Operations.

第 5 章：发送/接收操作介绍。

Chapter 6 – Division of Labor.

第 6 章：劳动分工。

Chapter 7 – Subnet-Local Addressing.

第 7 章：子网局部寻址。

Chapter 8 – Global Addressing.

第 8 章：全局寻址。

Chapter 9 – Intro to the Managers.

第 9 章：管理器介绍。

Chapter 10 – Intro to Connection Establishment.

第 10 章：连接建立介绍。

Chapter 11 – PSN Usage.

第 11 章：包序列号(PSN)的用法。

The Next Part | 下一部分

Part 2 begins the portion of the book that provides detailed information about the InfiniBand technology. Part 2 provides a detailed description of the creation of, the management of, and the basic operations of the various types of Queue Pairs. Part 2 contains of the following chapters: 本书自第二部分起，开始对 IB 技术进行详细的介绍。第二部分将对各种类型的 QP(或译作”队列对”)的创建，管理以及基本操作做出详细的描述。它包括如下章节：

Chapter 12 – QP Verbs and QP State Machine.

第 12 章：QP Verbs 和 QP 状态机。

Chapter 13 – WRs, WQEs, and CQEs.

第 13 章：WRs, WQEs 和 CQEs。

Chapter 14 – Asynchronous Events and Errors.

第 14 章：异步事件和异步错误。