

FUJITSU Software BS2000 APACHE

Version 2.4A  
November 2019

Release Notice

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# 1 General

This Release Notice contains in concise form the most essential dependencies and operation information for APACHE V2.4A under the BS2000 operating system.

APACHE (BS2000) V2.4A is based on the official release version of the web server Apache httpd 2.4.41 from the Apache Software Foundation<sup>1</sup>.

Additional components are the scripting language PHP version 5.6.40 and the scripting language Perl version 5.24.4 with the module mod\_perl.

The copyright information can be found at the end of this document.

The contents correspond to the release date: November 2019.

This and other current Release Notices are shipped on the SoftBooks DVD and are available online at <https://bs2manuals.ts.fujitsu.com>.

If one or more previous versions are skipped when this product version is used, the information from the Release Notices (and README files) of the previous versions must also be noted.

## 1.1 Ordering

APACHE (BS2000) V2.4A can be ordered via your local sales office.

APACHE (BS2000) V2.4A is subject to the general terms and conditions of the software product use and service agreement.

APACHE (BS2000) V2.4A is an integral part of the hardware-specific BS2000 offer packages OSD/BC and OSD/XC.

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<sup>1</sup> This product includes software developed by the Apache Software Foundation for the Apache HTTP server project (<https://httpd.apache.org/>).

## 1.2 Delivery

The APACHE (BS2000) V2.4A and PERL (BS2000) V52.4A files are delivered using the SOLIS delivery program. The valid file and data media attributes are listed in the accompanying SOLIS2 delivery document.

Supply unit:	BS2000 package:
BS2GA.APACHE V10.0	BS2000 OSD/BC V10.0 (S-Server) BS2000 OSD/XC V10.0 (SE-Server)
BS2GA.APACHE V11.0	BS2000 OSD/BC V11.0 (S-Server) BS2000 OSD/XC V11.0 (SE-Server)

The delivery consists of the following files:

### APACHE V2.4A:

SYSDOC.APACHE.024.OSS	License files for APACHE
SYSFGM.APACHE.024.D	Release Notice (German)
SYSFGM.APACHE.024.E	Release Notice (English)
SYSRME.APACHE.024.D	README file (German)
SYSRME.APACHE.024.E	README file (English)
SYSSDF.APACHE.024	SDF syntax file
SYSSPR.APACHE.024	internal command procedures
SINLIB.APACHE.024	APACHE Basic package (/390)
SINLIB.APACHE.024.HTTPD	APACHE Secure web server (/390)
SINLIB.APACHE.024.MODPERL	PERL APACHE module (mod_perl) (/390)
SINLIB.APACHE.024.MODPHP	PHP5 APACHE module (libphp5) (/390)
SKULIB.APACHE.024	APACHE Basic package (X86)
SKULIB.APACHE.024.HTTPD	APACHE Secure web server (X86)
SKULIB.APACHE.024.MODPERL	PERL APACHE module (mod_perl) (X86)
SKULIB.APACHE.024.MODPHP	PHP5 APACHE module (libphp5) (X86)
SINLIB.APACHE.024.HTTPD-DOC	Online-Doc APACHE web server
SINLIB.APACHE.024.MODPERL-DOC	Online-Doc PERL APACHE module
SINLIB.APACHE.024.MODPHP-DOC	Online-Doc PHP5 APACHE module

### PERL V52.4A:

SINLIB.PERL.524	PERL Interpreter & Runtime (/390)
SKULIB.PERL.524	PERL Interpreter & Runtime (X86)
SYSDOC.PERL.524.OSS	License files for PERL
SYSRME.PERL.524.D	README file (German)
SYSRME.PERL.524.E	README file (English)

### 1.3 Documentation

The complete documentation is included in the installation packages in the form of HTML files.

This documentation is only available in English  
(Exception: parts of APACHE:httpd-doc and APACHE:modphp-doc)

Information about installation, configuration, usage and documentation for the components of the supply unit BS2GA.APACHE in BS2000 can be found in the README files for

APACHE V2.4  
PERL V52.4

The README files are available on the SoftBooks-DVD or online under <https://bs2manuals.ts.fujitsu.com>.

## 2 Software extensions

### 2.1 Extensions in APACHE as part of the BS2000 adjustments

- SDF command interface  
APACHE is also supplied with an SDF syntax file, with the help of which start, restart, stop commands and status queries can be performed directly as SDF commands by TSOS or SYSROOT with the BS2000 ID.
- Unicode extension  
APACHE (BS2000) V2.4 also supports the BS2000-specific Unicode variant UTF-E (modified UTF-8), the various 8-bit-EBCDIC-DF04 variants, the equivalent 7-bit national EBCDIC-DF03 code variants and the 8-bit ISO codes 8859-x and a variety of other standardized character sets as well as conversion between these code sets during input/output.
- Modular installation  
During installation, only the product components that are chosen and needed by the customer are installed. This avoids any unnecessary resource allocation.
- Interactive installation  
Thanks to the interactive installation the basic configuration can already be implemented during the POSIX installation so that after completion of the installation the web server can be started immediately as an option. During the installation of the add-on modules for PHP and Perl support the newly installed module can, if requested, be directly activated and is thus immediately available.
- Utility programs  
Enclosed utility programs enable the web server operator to convert explicit character sets for files in POSIX, create SSL certificates and generate & maintain SQLite3 databases.

### 2.2 Extensions to version V2.4 compared with V2.2

With APACHE V2.4 a lot of extensions and improvements to the previous version of the web server implementation are introduced. For detailed information, please refer to the online documentation.

## 3 Technical information

### 3.1 Resource requirements

The packages and their space requirements:

PACKAGE	LMS-ELE VERSION	DESCRIPTION	BS2000 K-PAM		POSIX /opt MBYTE
			390	X86	
APACHE	V02.4A00	Basic package: joint directories and shared libraries	40	60	50
APACHE: HTTPD	V02.4A00	APACHE Secure web server, runtime	45	70	18
APACHE: HTTPD-D	V02.4A00	Online manual for APACHE	14		22
APACHE: MODPERL	V02.4A00	MOD_PERL APACHE module & mod_perl runtime	6	6	10
APACHE: MODPRL-D	V02.4A00	Online manual for MOD_PERL	15		26
APACHE: MODPHP	V02.4A00	MOD_PHP5 APACHE module, PHP-CLI	23	34	27
APACHE: MODPHP-D	V02.4A00	Online manual for PHP & MOD_PHP5	138		173
PERL	V052.4A00	PERL Interpreter CLI & runtime	62	73	90

The name "APACHE:MODPHP-D" (e.g.) stands for a package in the form of a SINLIB.APACHE.024.MODPHP-DOC or SKULIB, which is installed with the POSIX-INSTALLER as the product "APACHE" and the package of the product "MODPHP-D".

#### Server resource requirements:

The minimum memory requirement of the APACHE server amounts to (default configuration with 5 child processes) 300 MB of virtual memory. The individual child processes may require additional memory. Each additionally started child process requires about 50 MB of virtual memory.

With increasing server workload additional memory also becomes necessary. To achieve the best performance as high a percentage as possible of the virtual memory should be available as "real memory".

### 3.2 Software configuration

APACHE V2.4A is delivered with OSD/BC as of V10.0 and OSD/XC as of V10.0.

### 3.3 Product installation

Standard installation is via the product IMON (Installation MONitor).

The products of the supply unit BS2GA.APACHE are installed using the POSIX installation program under the user ID TSOS or SYSROOT.

BS2GA.APACHE consists of several POSIX package components that can be combined with each other on a modular basis. Depending on the functionality required, the installation can then be restricted to the components actually required.

Generally all new delivered POSIX package components have to be replaced because of possible functional dependencies between the packages of the current correction version.

See the attached Readme files of APACHE and PERL for a precise description of the installation procedure.

When upgrading a product, please observe the following:

- Before installing a newly delivered POSIX package component of APACHE, the previously installed version has to be removed. In order to perform a successful de-installation of an APACHE product, the original installation libraries ("SINLIBs, SKULIBs") are needed. This applies whether or not the main version number has changed.
- In order to avoid unintentional overwriting of original installation libraries by SOLIS new libraries are installed with suffix ".NEW" if files with original name exist.

Steps to perform for POSIX component de-installation/installation if main version number has not changed:

- POSIX component de-installation with original version.
  - Renaming the new installation libraries to original name (without suffix ".NEW").
  - POSIX component installation with new (renamed) version.
- Any modified configuration files remain unchanged after de-installation.
  - If upgrading within the same main version number, modified configuration files are adopted by the new version.



### **3.4 Product use**

We recommend a performance analysis before using APACHE (BS2000) V2.4A.

### **3.5 Discontinued functions (and those to be discontinued)**

PHP:  
GDBM is not supported anymore in this version.

### **3.6 Incompatibilities**

If upgrading from an older version to APACHE V2.4, please note that configuration files of an APACHE V1.3 or V2.2 installation can't be automatically adopted. For information about upgrading, especially for significant changes in authorization configuration, please check the online guide <http://<servername>/manual/upgrading.html>.

The items listed in paragraph 3.6 of the release notice for APACHE V2.2A (edition: Mai 2018) are still valid.

### **3.7 Restrictions**

Perl:  
The loading in a POSIX-Program-Cache (posdbl, pdbl) is not allowed.

For description of further restrictions compared to the original of the ported software please refer to the product readme files.

### 3.8 Procedure in the event of errors

In the event of an error, we need - depending on the type of problem - the following information for diagnosis purposes:

- exact problem description
- output error messages
- logging files (excerpts):
  - /opt/apache24/logs/error\_log
  - /opt/apache24/logs/access\_log
  - /var/adm/syslog
- Apache and (if related to the error) add-on components' configuration files:
  - /opt/apache24/conf/\*.conf
  - /opt/apache24/conf/extra/\*.conf
  - /opt/apache24/conf/conf.d/\*.conf
- BS2000 user attributes of the SYSROOT user ID and the Apache run ID, e.g.:

```
/SHOW-USER-ATTR SYSROOT [,PUBSET=*DEFAULT]
/SHOW-USER-ATTR APACHE [,PUBSET=*DEFAULT]
/SHOW-POSIX-USER-ATTR SYSROOT
/SHOW-POSIX-USER-ATTR APACHE
```

Also if SECOS is used:

```
/SHOW-LOGON-PROT SYSROOT
/SHOW-LOGON-PROT APACHE
```

- Remaining space on the respective POSIX file systems (verify whether space problems could be the cause of the error):
  - # /sbin/df /opt/apache24 /var/opt/APACHE24.httpd
- If CGI or PHP script: program description.
- System environment
  - BS2000 system:
  - BS2000: Version, loader
  - POSIX: Version, loader or correction status
  - DCAM: Version, loader or correction status
  - APACHE: Version
  - PERL: Version

## **4 Hardware requirements**

The products of the supply unit for APACHE (BS2000) V2.4A can be run on all supported systems from OSD/BC V10.0 and above.

## 5 Appendix

### 5.1 Copyright information

- Apache Web Server:

"This product includes software developed by the Apache Software Foundation for use in the Apache HTTP server project (<http://httpd.apache.org/>)."

- PHP scripting language:

"This product includes PHP software, freely available from <URL:<http://www.php.net/software/>>"

PHP includes the Zend Engine, freely available at <URL:<http://www.zend.com/>>.

- perl scripting language  
(see `/opt/perl/readme/` after installation)  
Perl is Copyright (C) 1993, 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007, 2008, 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018 by Larry Wall and others.  
All rights reserved. (Distributed under the 'Artistic License')  
The source distribution is available freely from <URL:<https://www.perl.com/CPAN/src/>>.

- cronolog: Logfile Rotierprogramm

This product includes the cronolog utility <URL:<http://cronolog.org/>> originally written by Andrew Ford <[A.Ford@ford-mason.co.uk](mailto:A.Ford@ford-mason.co.uk)>.

- Open Source Bibliotheken  
(siehe unter `/opt/apache24/license.d/` nach Installation)

`[libz.so]`:

This product includes the zlib library developed by Jean-loup Gailly <[jloup@gzip.org](mailto:jloup@gzip.org)> and Mark Adler <[madler@alumni.caltech.edu](mailto:madler@alumni.caltech.edu)>.

`[libbz2.so]`:

This product includes the libbz2 library developed by Julian R Seward.

`[libdb1.so]`:

This product includes software developed by the University of California, Berkeley and its contributors.

`[libpng.so]`:

This product includes the libpng library developed by Glenn Randers-Pehrson, Andreas Dilger, Guy Eric Schalnat, Group 42, Inc.

`[libjpeg.so]`:

This product includes the libjpeg library developed by the Independent JPEG Group.

`[libssl.so libcrypto.so openssl libcrypt.so]`:

This product includes cryptographic software written by Eric Young ([eay@cryptsoft.com](mailto:eay@cryptsoft.com))

## [libssl.so libcrypto.so openssl]:

This product includes software developed by the OpenSSL Project for use in the OpenSSL Toolkit (<http://www.openssl.org/>)

## [libedit.so]:

This product includes software developed by the NetBSD Foundation, Inc. and its contributors.

## [libfreetype.so]:

Portions of this software are copyright (C) 2019 The FreeType Project ([www.freetype.org](http://www.freetype.org)). All rights reserved.

## [libmm.so]:

"This product includes software developed by Ralf S. Engelschall <[rse@engelschall.com](mailto:rse@engelschall.com)>."

## [libgd.so]:

Portions copyright 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004 by Cold Spring Harbor Laboratory. Funded under Grant P41-RR02188 by the National Institutes of Health.

Portions copyright 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004 by Boutell.Com, Inc.

Portions relating to GD2 format copyright 1999, 2000, 2001, 2002, 2003, 2004 Philip Warner.

Portions relating to PNG copyright 1999, 2000, 2001, 2002, 2003, 2004 Greg Roelofs.

Portions relating to gdttf.c copyright 1999, 2000, 2001, 2002, 2003, 2004 John Ellson ([ellson@graphviz.org](mailto:ellson@graphviz.org)).

Portions relating to gdft.c copyright 2001, 2002, 2003, 2004 John Ellson ([ellson@graphviz.org](mailto:ellson@graphviz.org)).

Portions copyright 2000, 2001, 2002, 2003, 2004, 2005, 2006, 2007 Pierre-Alain Joye ([pierre@libgd.org](mailto:pierre@libgd.org)).

Portions relating to JPEG and to color quantization copyright 2000, 2001, 2002, 2003, 2004, Doug Becker and copyright (C) 1994, 1995, 1996, 1997, 1998, 1999, 2000, 2001, 2002, 2003, 2004, Thomas G. Lane. This software is based in part on the work of the Independent JPEG Group. See the file README-JPEG.TXT for more information.

Portions relating to GIF compression copyright 1989 by Jef Poskanzer and David Rowley, with modifications for thread safety by Thomas Boutell.

Portions relating to GIF decompression copyright 1990, 1991, 1993 by David Koblas, with modifications for thread safety by Thomas Boutell.

Portions relating to WBMP copyright 2000, 2001, 2002, 2003, 2004 Maurice Szmurlo and Johan Van den Brande.

Portions relating to GIF animations copyright 2004 Jaakko Hyvätti ([jaakko.hyvatti@iki.fi](mailto:jaakko.hyvatti@iki.fi)).